

Volume

#

R0399

T. 20 S., R. 14 E.

BOOK A-399

INDEX DIAGRAM.

Township 20 South Range 14 East
46 47 49 50 51 53

43	6	157	5	114	4	98	3	83	2	69	1	32
	136		134		113		96		82		67	
42	7	133	8	111	9	95	10	80	11	66	12	31
	132		130		110		94		79		65	
40	16	129	17	108	16	92	15	77	14	64	13	29
	127		126		107		91		76		63	
39	19	124	20	105	21	89	22	75	23	62	24	28
	123		122		104		88		73		61	
37	30	120	29	101	28	86	27	72	26	60	25	26
	119		117		100		85		71		59	
36	31	116	32	99	33	84	34	70	35	58	36	25
	23		21		19		17		15		13	

FIELD NOTES

OF THE SURVEY OF THE

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

Of the Meridian,

In the State of

EXECUTED BY

.....

.....

.....

.....

.....

In the capacity of U. S. Surveyor....., under instructions dated....., 191....

issued by the United States Surveyor General to govern surveys included in

Group No....., which were approved by the Commissioner of the General Land

Office,....., 191..., pursuant to authority contained in the Act of

Congress dated....., 191....

Survey commenced....., 191....

Survey completed....., 191....

INDEX DIAGRAM.

Township 24 South Range 13 East
 183 185 187 188

179	6	5	307	4	293	3	282	2	270	1	152	
	328	326	306		293		281		269			
177	7	323	8	304	9	291	10	280	11	268	12	154
	322	321	303		290		279		267			
175	16	320	17	301	16	289	15	277	14	266	13	156
	319	318	300		288		276		265			
173	10	316	20	299	21	287	22	275	23	263	21	155
	316	314	295		287		274		262			
172	30	313	29	297	28	286	27	273	26	261	25	160
	312	312	296		285		273		259			
171	31	310	32	295	33	284	31	272	35	258	36	162
	170	168	167		166		165		164			

FIELD NOTES

OF THE SURVEY OF THE

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

Of the Meridian,

In the State of

EXECUTED BY

.....

.....

.....

.....

.....

.....

.....

In the capacity of U. S. Surveyor....., under instructions dated....., 191.....,

issued by the United States Surveyor General to govern surveys included in

Group No., which were approved by the Commissioner of the General Land

Office,, 191....., pursuant to authority contained in the Act of

Congress dated, 191.....

Survey commenced 191.....

Survey completed 191.....

INDEX DIAGRAM.

Township 23 South Range 13 East
 210 211 212 ✓ 213 214 215

208	6	434	5	408	4	388	3	2	353	1	198		
		432		431					368		352		
207	7	430	8	406	9	385	10	366	11	349	12	197	
		428		427		404		383		364		349	
206	18	425	17	402	16	381	15	363	14	347	13	196	
✓		424		422		400	✓	379		362		346	✓
204	19		20	398	21	376	22	360	23	345	24	194	
		420		418		396		375		359		344	
203	30	415	29	394	28	373	27	358	26	343	25	193	
		413		410		392		372		356		342	
201	31		32	389	33	370	34	355	35	340	36	191	

FIELD NOTES

OF THE SURVEY OF THE

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

Of the Meridian,

In the State of

EXECUTED BY

.....

.....

.....

In the capacity of U. S. Surveyor....., under instructions dated....., 191.....,

issued by the United States Surveyor General to govern surveys included in

Group No. which were approved by the Commissioner of the General Land

Office, 191....., pursuant to authority contained in the Act of

Congress dated 191.....

Survey commenced....., 191.....

Survey completed....., 191.....

INDEX DIAGRAM.

Township 22 South Range 13 East
~~243~~ 244 245 ✓ 246 247 248

T. 22 S. R. 13 E.

237	6	493	5	476	4	463	3	462	2	1	229	6
	492		491		475		461			454		
236	7	490	8	474	9	459	10		11		12	227
	489		488		473					453		
234	18	486	17	472	16	458	15		14		13	225
	485		484		471					451		
233	19	483	20	470	21	457	22		23	450	24	224
	482		481		469					449		
232	30	480	29	467	28	456	27		26	448	25	223
	479		478		466					447		
231	31	477	32	465	33	455	34		35	446	36	222

N. Bdy 22 S. R. 13 E. 19 938

FIELD NOTES

OF THE SURVEY OF THE

Of the Meridian,

In the State of

EXECUTED BY

In the capacity of U. S. Surveyor....., under instructions dated....., 191...,
issued by the United States Surveyor General to govern surveys included in
Group No., which were approved by the Commissioner of the General Land
Office,, 191..., pursuant to authority contained in the Act of
Congress dated....., 191...

Survey commenced....., 191...

Survey completed....., 191...

BOOK A-399

ER
MKR

FIELD NOTES

OK
11/13
12/1
11/1

OF THE SURVEY

RETRACEMENT AND RESURVEY OF THE FOURTH STANDARD PARALLEL SOUTH, RANGE 14

RESURVEY OF EAST, WEST, AND NORTH BOUNDARIES

AND

SURVEY OF THE SUBDIVISION

OF

TOWNSHIP 20 SOUTH, RANGE 14 EAST

Of the SALT LAKE BASE AND Meridian,

In the State of U T A H

EXECUTED BY

HOWARD W. MILLER

In the capacity of U. S. Surveyor, under instructions dated June 10, 1912, issued by the United States Surveyor General to govern surveys included in Group No. 18, which were approved by the Commissioner of the General Land Office, by telegram June 19, 1912, pursuant to authority contained in the Act of Congress dated, 191

Survey commenced July 2, 1912

Survey completed July 26, 1912

BOOK A-399

INDEX DIAGRAM.

Township _____, Range _____

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Retrace ment and recovery of the Fourth Standard Parallel South through R

chains

Survey commenced July 2, 1912 and executed with a W. and L. E. Gurley solar compass No. 1043.; the horizontal limb is provided with one vernier which reads to signal minutes of arc, which is also the least count of the verniers of the lat. and decl. arcs:

The instrument was examined tested on the true meridian at Paet Lake City, found correct and was approved by the U. S. Surveyor General for Utah, June 4, 1912.

I examine the adjustments of the compass and correct the level and collimation errors; then, to test the solar apparatus, by comparing its indications, resulting from solar observations made during p.m. and a.m. hours, with a true meridian determined by observations made on Polaris, I proceed as follows:

I begin at the standard ^{S.E.} cor. of T. 20 S., R. 14 E., which is a sandstone. 10 x 10 x 6 in. above ground, firmly set and marked and witnessed as described by the Surveyor General. At said cor. in lat. $39^{\circ} 01' 42''$ N., longitude $110^{\circ} 18' 47''$ W., I set off $39^{\circ} 02'$ on the lat. arc; $23^{\circ} 02'$ N. on the decl. arc; and at 4^{h.} 34^{m.} p.m. l.m. t. determine with the solar a true meridian and mark a point thereof on a stone, firmly set in the ground 5 chs. N. of the cor.

At 7^{h.} 45^{m.} p.m. by my watch which carries correct local mean time, I observe Polaris, and mark the direction thus determined, by a tack driven in a picket, firmly set

Retacement and recovery of the fourth Standard Parallel South, through Range

Chaus

5 Chs. N. of the cor.
 Astron. time of observation July 2 = 7^h. 45^m
 Equivalent to time of July 1 = 31 45
 Astron. time of Upper. C. Polaris July 1 = 18 47
 Hour angle of Polaris at observ. = 12 58
 Subt rail from = 23 56.1
 Time argument = 10 58
 Azimuth of Polaris, at observation = 0° 24 E.
 July 2, 1912.

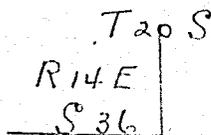
July 3: At 6^h. 30^m. a.m. I lay off the azimuth of Polaris 0° 24 W. and find that my Polaris meridian agrees with the solar meridian of July 2.

At 7^h. 04^m. a.m. l.m.t., I set off 39° 02' on the lat. arc; 23° 00' N. on the decl. arc; and determine a meridian with the solar; this meridian also agrees with the Polaris meridian and the solar meridian of July 2. I therefore know that the instrument is in perfect adjustment.

The magnetic bearing of the true meridian at 7^h. 15^m. a.m. is N. 15° 45' W., which gives the magnetic decl. 15° 05' E.

I destroy all traces of the standard tp. cor. already described and reestablish it at the same point as follows.

Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for reestablished cor. of T. 20 S., R. 14 E. with brass cap marked



1912

dig pits, 36 x 36 x 12 ins. on each line

Retracement + resurvey of the Fourth Standard Parallel South through Range 14

Chains.

N. and W. of post, 8 ft. dist., raise a mound of earth 5 ft. base, 2 1/2 ft. high NW. of cor.

Note: Being unable to hire extra assistants at this moment to assist in chaining this standard Parallel I retrace and resurvey it with only one set of chainmen, but use great care in doing the work.

Thence I run West, retracing the S. bdy. of sec. 36. Over rolling land draining SW. through short undergrowth of shadscale.

Gradually descend.

15.00 Wash, 10 lks. wide, 3 ft. deep, drains SW.

29.00 Wash, 15 lks. wide, 1 ft. deep, drains S.

40.00 Intersect the 1/4 sec. cor. which is a pine post, 3 ins. sq., 1 ft. above ground firmly set and marked and witnessed as described by the Surveyor General.

I destroy all traces of the old cor. and reestablish it at the same point as follows:

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for reestablished standard 1/4 sec. cor., with brass cap marked

S 36
1/4

1912

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high N. of cor.

The true bearing of this line is West and the distance is 40.00 chs

chaussé.

From the $\frac{1}{4}$ sec. cor. I continue West.

16.70 Intersect the closing cor. of secs. 5 and 6, T. 21 S., R. 15 E. which is a pine post 3 ins. sq., 1 ft. above ground, firmly set and marked and witnessed as described by the Surveyor General. Gradually ascend.

19.90 Telegraph line, bears N. $17^{\circ} 34'$ W., and S. $17^{\circ} 34'$ E.

20.50 Center of the Denver and Rio Grande railroad track, bears N. $17^{\circ} 34'$ W., and S. $17^{\circ} 34'$ E.

21.50 Wagon road, from Green river, Utah to Price, Utah, bears N. 20° W. and S. 20° E.

29.90 Top low ridge 30 ft. high, bears N. and S.

40.00 Descend over bluff, 30 ft. to Fall 6 lbs. S. of the standard cor. of secs. 35 and 36 which is a sandstone, $8 \times 10 \times 10$ ins. above ground, firmly set, and marked and witnessed as described by the Surveyor General. I destroy all traces of the old cor. and reestablish it at the same point as follows:

Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for reestablished standard cor. of secs. 35 and 36 with brass cap marked.

T 20 S	R 14 E
S 35	S 36 ✓

1912

dig pits, $24 \times 18 \times 12$ ins. crosswise on each line, E. and W., 3 ft. and N. of post 7 ft. dist., raise a mound of earth, 4 ft. base, 2 ft. high N. of cor. The true bearing of this line is N. $89^{\circ} 55'$ W., and the distance is 40.00 chs.

Retracement & resurvey of the Fourth Standard Parallel south, through Range 114

chains

Land, hilly and rolling with a general S. drain.

E. 56.70 chs. rolling land. W. 23.30 chs. hilly land.

Soil, blue clay mixed with alkali; 3rd rate.

Sub-soil, shale and a hard dry clay.

Undergrowth, short shadscale.

No timber.

Some grass for grazing

West, retracing on the S. bdy. of sec. 35. Gradually descend over rolling land sloping W., through short undergrowth of shadscale.

22.50 Saleratus wash, 8 chs. wide, 6 ft. deep, course S.

Enter greasewood undergrowth, about 3 ft. high.

Gradually ascend.

39.94 Fall 8 lks. S. of the $\frac{1}{4}$ section cor. which is a dilapidated sandstone with marks nearly obliterated and witnessed by traces of pits E. and W. of cor.

I destroy all traces of the old cor. and reestablish it at the same point as follows:

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for reestablished standard $\frac{1}{4}$ sec. cor., with brass cap marked.

S 35

1/4 ✓

1912

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., raise a mound of earth $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.

chains

The true bearing of this line is $N. 89^{\circ} 53' W.$, and the distance is 39.94 chs.

From the standard $\frac{1}{4}$ sec. cor., I continue west.

10.00 Leave greasewood undergrowth, bears N. and S.

15.00 N. 3 lks. is the closing cor. of T. 21 S., R. 14 and 15 E., which is a limestone $10 \times 8 \times 5$ ins. above ground, firmly set, and marked and witnessed as described by the Surveyor General.

40.16 Fall 6 lks. S. of the standard cor. of secs. 34 and 35 which is a limestone $10 \times 13 \times 6$ ins. above ground, firmly set, and marked and witnessed as described by the Surveyor General. I destroy all traces of the old cor. and reestablish it at the same point as follows:

Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for reestablished standard cor. of secs. 34 and 35 with brass cap marked.

T 20 S	R 14 E
S 34	S 35

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.

The true bearing of this line is $N. 89^{\circ} 55' W.$, and the distance is 40.16 chs.

Land, rolling with a general S. draw.

Soil, gravelly and clay; 3rd. rate.

Sub-soil, hard dry alkali clay.

No timber.

Undergrowth, short shadscale and greasewood. Greasewood undergrowth on 27.44 chs.

Retracement & resurvey of the fourth Standard Parallel South, through Range 11

chains

Some good grass for grazing.
 July 3: At this cor. I set off $22^{\circ} 58'$ N., on the decl. arc; and at $12^{\text{h}} 04^{\text{m}}$ p. m. l. m. t., observe the sun on the meridian; the resulting lat. is $39^{\circ} 02'$

West, retracing on the S. bdy. of sec 34.

110.00

After a long and careful search I am unable to find any trace of the standard $\frac{1}{4}$ sec. cor.

80.15

Fall 21 lks. S. of the standard cor. of secs. 33 and 34 which is a sandstone, $10 \times 14 \times 3$ ins. above ground, firmly set and marked and witnessed as described by the Surveyor General.

I destroy all traces of the old cor. and reestablish it at the same point as follows:

Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for reestablished standard cor. of secs. 33 and 34 with brass cap marked.

T 20 S	R 14 E
S 33	S 34 ✓

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.

The true bearing of this line is $N. 89^{\circ} 51' W.$, and the distance is 80.15 chs.

I therefore run $S. 89^{\circ} 51' E.$, resurveying on the S. bdy. of sec. 34.

Over mountainous land.

15.15

Descend towards Cottonwood Wash. Cottonwood wash, 2 chs. wide, 5 ft. deep, course S. Wagon road in

chain

Wash, bears N. and S.

25.20 N. 5 lks. is the closing cor. of secs. 31 and 2, T. 21 S., R. 14 E. which is a sandstone 8x14x7 ins. above ground firmly set and marked and witnessed as described by the Surveyor General.

27.65 Base of ridge, bears N. and S. Ascend abruptly 50 ft to

30.15 Top of ridge, bears N. and S. Descend 30 ft. to

37.95 Hollow, drains SW.

Begin abrupt ascent of west face of bluff.

40.07 $\frac{1}{4}$ Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for standard $\frac{1}{4}$ sec. cor., with brass cap marked

S 34

$\frac{1}{4}$ ✓

1912.

raise a mound of stone, $\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.

42.15 Top of bluff 100 ft. above hollow, bears N. and S.

Gradually ascend.

43.55 Top of ridge, bears N. + S.

Thence descend over land sloping E

74.15 Leave mountainous land, 75 ft. below ridge, bears N. and S.

Gradually descend

80.15 The standard cor. of secs. 34 and 35 land, mountainous and rolling.

W. 74.15 chs. mountainous land.

E. 6.00^{chs} rolling land. General drain of country to the south.

Soil, stony, gravelly and clay, 4th rate.

Sub-soil, hard clay and shale.

No timber.

Retracement + resurvey of the Fourth Standard Parallel South, through Range 14

chain

Undergrowth short shadscale.
 Mountainous land 74.15 chs.
 July 3, 1912.

July 5: At 8^h 04^m a.m. l.m.t., I set off 39° 02' on the lat. arc; 22° 49' N. on the decl. arc; and determine a meridian with the solar at the standard cor. of secs. 33 and 34. Thence I run West, retracing on the S. bdy. of sec. 33. Over broken mountainous land through short undergrowth of shadscale.

- Ascend 20 ft. to
 5.00 Ridge, bears N. and S.
 Descend 50 ft. to
 11.00 Hollow, drains N. 3 chs. to Cottonwood wash.
 Ascend abruptly 75 ft. to
 14.00 On N. slope of spur, projects N. 2 chs. to Cottonwood wash.
 Descend 50 ft. to
 18.50 Wash in hollow, 10 lks. wide, drains N.
 Ascend 30 ft. to
 21.00 Low ridge, bears N. and S.
 Thence over broken land sloping N.
 40.00 Fall 10 lks. S. of the 1/4 sec. cor., which is a sandstone, 15 x 12 x 4 ins above ground, firmly set, and marked and witnessed as described by the Surveyor General.
 I destroy all traces of the old cor. and reestablish it at the same point as follows:
 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for reestablished standard 1/4 sec. cor., with brass cap marked

Chain

S 33
1/4 ✓

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high N. of cor.

The true bearing of this line is N. 89° 51' W, and the distance is 40.00 chs.

From the 1/4 sec. cor. I continue West.

5.00 Low ridge, bears N. and S. descend 30 ft to.

9.00 Hollow, drains N.

Thence over rolling sandy land, gradually ascending.

15.07 N. 8 lks. is the closing cor. of secs.

2 and 3, T. 21 S., R. 14 E. which is a sandstone 15 x 14 x 4 ins. above ground firmly set, and marked and witnessed as described by the Surveyor General.

32.00 Forks of wagon road from Cottonwood wash, bear, SE. to Greensawyer, Utah and SW. to Pau Rafael.

40.00 Fall 17 1/2 lks. S. of the standard cor. of secs. 32 and 33 which is a basalt stone, 12 x 10 x 8 ins. above ground, firmly set, and marked and witnessed as described by the Surveyor General.

I destroy all traces of the old cor. and reestablish it at the same point as follows:

Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for reestablished standard cor. of secs. 32 and 33 with brass cap marked.

T20 S | R14 E ✓
S32 | S33

1912

Retracement & recovery of the Fourth Standard Parallel South, through Range 14

chains

raise a mound of stone, 2 ft. base, 1 1/2 ft. high N. of cor.

The true bearing of this line is N-89°45' W., and the distance is 40.00 chs.

Land, mountainous and rolling draining N.

Soil; rocky and sandy; 4th. and 2nd. rates. Sub-soil, rocky.

No timber.

Undergrowth short shadscale.

Good grass for grazing on 31.00 chs.

Mountainous land 49.00 chs.

West, retracing on S. bdy. sec. 32.

Over mountainous land.

Ascend 30 ft. to

5.50 Spur, projects S.

Descend 30 ft. to

8.00 Hollow, drains S.

Ascend gradually 25 ft. to

20.00 Spur, projects S.

Descend abruptly 50 ft. to

24.50 Hollow, drains S.

Ascend 30 ft. to

28.70 Spur, projects S.

Descend 50 ft. to

32.50 Hollow, drains S.

Ascend 30 ft. to

34.25 Spur, projects S.

Descend

40.36 Fall 25 lbs. S. of the standard 1/4

sec. cor., which is a basalt stone 12 x 9 x 4 ins. above ground, firmly set and marked and witnessed as described by the Surveyor General.

I destroy all traces of the old cor. and reestablish it at the same point as follows:

Set an iron post, 3 ft. long, 1 in. in

tracement & recovery of the fourth Standard Parallel South, through range 14 East.

chains.

24 ins. in the ground for reestablished 1/4 sec. cor., with brass cap marked.

$$\begin{array}{r} S 32 \\ \hline 1/4 \end{array} \checkmark$$

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high N. of cor.

The true bearing of this line is N. 89° 40' W., and the distance is 40.36 chs.

From the standard 1/4 sec. cor. I continue West.

- 0.50 Wash, 10 lks. wide, 3 ft. deep, course S. Ascend.
- 5.00 Low spur, projects S. Descend 30 ft to
- 13.70 Wash, 25 lks. wide, course S.E.. Ascend
- 15.00 Intersect the closing cor. of secs. 3. and 4, T. 21 S., R. 14 E., which is a basalt stone, 10 x 12 x 12 ins. firmly set in a mound of stone and marked and witnessed as described by the Surveyor General.
- 24.00 Ridge, bears N. and S. Gradually descend 50 ft to
- 31.00 Old wagon road, bears N. and S.
- 40.00 Fall 1 lk. N. of the standard cor. of secs. 31 and 32 which is a sandstone. 27 x 13 x 3 ins., above ground, firmly set and marked and witnessed as described by the Surveyor General.
- I destroy all traces of the old cor. and reestablish it at the same point as follows:
- Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for reestablished standard cor. of secs. 31 and 32, with brass cap marked

Retracement & resurvey of the Fourth Standard Parallel South, through Range

Chains

T 20 S	R 14 E
S 31	S 32 ✓

1912.

raise a mound of stone, 2 ft. base, 1 1/2 ft. high N. of cor.

Note on account of natural obstacles I am unable to set post in the ground.

The true bearing of this line is S. 89° 59' W., and the distance is 40.00 chs.

Land, mountainous draining S.

Soil, rocky of volcanic formation; 4 th. rate. Sub. soil, rocky and clay.

No timber

No Undergrowth.

Mountainous land 80.36 chs.

July 5: at this cor. I set off 22° 47' N. on the decl. arc; and at 12^h. 04^m. p. m. l. m. t., observe the sun on the meridian; the resulting lat. is 39° 02'

West, retracing on the S. bdy. of sec. 31
Over broken mountainous land
draining SW.

Gradually descend.

17.70 Top of rocky ledge, 30 ft. high, bears N. and S.

Thence descend over rocky land sloping nearly S.

35.00 Wash, 1 ch. wide, 100 ft. below sec. cor. course S.

Ascend 50 ft. to.

40.35 Fall 5 lks. S. of the standard 1/4 sec. cor. which is a sandstone 10 x 6 x 4 ins. above ground, firmly set and marked and witnessed as described by the Surveyor General.

I destroy all traces of the old cor. and reestablish it at the same point as follows:
Set an iron post, 3 ft. long, 1 in. in

chains

dia, 24 ins. in the ground for reestablished standard 1/4 sec. cor., with brass cap marked

S 31
1/4 ✓

1912.

raise a mound of stone, 2 ft. base, 1 1/2 ft. high N. of cor.

The true bearing of this line is N. 89° 56' W, and the distance is 40 35. chs.

From the standard 1/4 sec. cor. I continue West.

14.65 Intersect the Closing cor. of secs. 4 and 5, T. 21 S., R. 14 E., which is a sandstone 12 x 10 x 5 ins. above ground, firmly set and marked and witnessed as described by the Surveyor General.

32.00 Head of wash, drains SE. Ascend 50 ft. to

39.00 Top of spur, projects NE. Descend

40.20 Fall 6 lks. S. of the standard cor. of T. 20 S., R. 13 and 14 E. which is a sandstone 15 x 12 x 8 ins. above ground, firmly set and marked and witnessed as described by the Surveyor General. I destroy all traces of the old cor. and reestablish it at the same point as follows:

Set an iron post, 3 ft. long, 3 ins. in dia, 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high, for reestablished standard cor. of T. 20 S., R. 13 and 14 E., with brass cap marked.

T 20 S
R 13 E | R 14 E ✓
S 36 | S 31

1912.

raise a mound of stone, 2 ft. base,

chain.

1 1/2 ft. high N. of cor.

Note: On account of natural obstacles I am unable to set post in the ground.

The true bearing of this line is $N. 89^{\circ} 55' W.$, and the distance is 40.20 chs.

Land, mountainous draining S.

Soil, rocky and sandy; 4 th. rate.

Sub-soil, rocky.

No timber.

Undergrowth some shadscale.

Mountainous land 80.55 chs.

July 5, 1912

Resurvey of the East boundary of
T. 20 S., R. 14 E.

Survey commenced July 6, and executed with a W. & L. E. Gurley solar compass No. 1043.

I know the instrument to be in perfect adjustment by tests made on a Polaris meridian July 2, 1912.

Note: As no subdivisions have been closed upon this boundary and it being very probable that this line is out of limit both in alignment and distance, I resurvey it as follows:

At 8^h. 04^m. a. m. l. m. t., I set off $39^{\circ} 02'$ on the lat. arc; $22^{\circ} 43' N.$, on the decl. arc; and determine a meridian with the solar at the standard S. E. cor. of T. 20 S., R. 14 E. heretofore described.

Thence I run

North, resurveying bet. secs. 31 and 36.

Over rolling clay hills draining SW. through some short undergrowth of shadscale.

12.80

Wash, 10 lks. wide, 8 ft. deep, drains SW.

Resurvey of the East boundary of T. 20 S., R. 14 E.

chain

Gradually ascend.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked.

S 36 $\frac{1}{4}$ | S 31 ✓

1912.

dig pits 18 x 18 x 12 ins., N. and S. of post 3 ft. dist., raise a mound of earth, 3 $\frac{1}{2}$ ft. base, 1 $\frac{1}{2}$ ft. high W. of cor. The old $\frac{1}{4}$ sec. cor. which is a sandstone 14 x 12 x 3 ins., bears E. 72 lbs.

Destroy the cor.

Ascend 30 ft to

41.90 Clay spur, projects SW.

Thence over land facing W.

80.00 Set an iron post, 3 ft. long, 3 in. in dia., 24 ins. in the ground for cor. of secs. 25, 30, 31 and 36, with brass cap marked.

. T 20 S

R 17 E	R 15 E
S 25	S 30 ✓
S 36	S 31

1912

dig pits, 18 x 18 x 12 ins. in each. sec. 5 $\frac{1}{2}$ ft. dist., raise a mound of earth 4 ft. base, 2 ft. high W. of cor. From this point, the old sec. cor. a sandstone 12 x 12 x 10 ins., bears E. 159 lbs., destroy cor.

Land, rolling, draining SW.

Soil, adobe clay and alkali, 4th. rate.

Sub-soil, shale.

No timber

Undergrowth, short shade-scale.

North, bet. secs. 25 and 30

Resurvey of the East Boundary of T. 20 S., R. 14 E.

chains.

10.00 Over rolling clay hills draining SW.
Top of clay ridge, bears N. and SE.
Thence on ridge.

20.00 North end of ridge, descend.

39.30 Wash, 15 lks. wide, 5 ft. deep,
drains SW.

Ascend.

40.00 Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in the ground for $\frac{1}{4}$
sec. cor. with brass cap marked.

S 25 $\frac{1}{4}$ | S 30 ✓

1912

dig pits, 18 x 18 x 12 ins. N. and S. of
post, 3 ft. dist, raise a mound of
earth, 3 $\frac{1}{2}$ ft. base, 1 $\frac{1}{2}$ ft. high W. of
cor.

From this point, the old $\frac{1}{4}$ sec. cor., a
sandstone, 24 x 12 x 10 ins., bears N. 79°
E., 240 chs. dist. I destroy old cor.

Thence over nearly level land

80.00 Set an iron post, 3 ft. long, 3 ins. in
dia., 24 ins. in the ground for cor.
of secs. 19, 24, 25 and 30, with brass
cap marked

T 20 S	
R 14 E	R 15 E
S 24	S 19
S 25	S 30

1912.

dig pits, 18 x 18 x 12 ins., in each sec.
5 $\frac{1}{2}$ ft. dist, raise a mound of earth
4 ft. base, 2 ft. high W. of cor.

From this point, the old sec. cor.,
a sandstone 18 x 18 x 12 ins., bears
N. 88° E., 209 chs. dist, I destroy
old cor.

Land, rolling

Soil, adobe clay and alkali; 4th

Resurvey of the East Boundary of T.20. S., R.14 E.

chains

rates.

Sub-soil, shale.

No timber

No Undergrowth.

July 6: at this sec. cor. I set off $22^{\circ}41'$ N. on the decl. arc; and at $12^{\text{h}}04^{\text{m}}$ p.m. l.m.t., observe the sun on the meridian; the resulting lat. is $39^{\circ}03'$

North, bet. sees. 19 and 24.

Gradually ascend over rolling clay hills draining SW.

18.90 Clay ridge, 30 ft. high, bears NE. and SW.

Descend 60 ft. to

30.50 Wash, 10 lks. wide, 5 ft. deep, drains SW.

Gradually ascend.

40.00 Set an iron post, 3 ft. long, $\frac{1}{2}$ in. dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked.

S 24 $\frac{1}{4}$ | S 19 \checkmark

1912.

raise a mound of stone, 2 ft. base, $\frac{1}{2}$ ft. high W. of cor.

From this point, the old $\frac{1}{4}$ sec. cor. which is a sandstone, $18 \times 18 \times 8$ ins., bears N. $88^{\circ}30'$ E., 245 chs.: I destroy old cor.

46.90 Top ridge, 50 ft. high, bears E. and W.
Thence descend across wide hollow.

54.25 Wash in hollow, 15 lks. wide, 5 ft. deep, drains W.

Gradually ascend.

75.00 Leave hollow, bears E. and W.

Ascend abruptly 40 ft. to

78.20 Spur, projects SW.

Resurvey of the East Boundary of T. 20 S., R. 14 E.

chain.

Descend.

80.00 Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for cor. of secs. 13, 18, 19 and 24, with brass cap marked

T 20 S	
R 14 E	R 15 E
S 13	S 18 ✓
S 24	S 19

1912

raise a mound of stone, 2 ft. base, 1 1/4 ft. high W. of cor.

From this point the old sec. cor. which is a sandstone 18 x 9 x 9 ins., bears E., 2.85 chs.: I destroy old cor. Land, hilly.

Soil, clay; 3rd. rate.

Sub-soil, hard shale and alkali.

No timber.

No Undergrowth.

North, bet. secs. 13 and 18.

Over broken mountainous land draining SW.

Ascend 60 ft. to

10.00 Flat ridge, bears E. and W.

Descend 40 ft. to

15.00 Small wash, drains W.

Thence over land facing W.

23.50 Small wash, drains SW.

Ascend 70 ft. to

30.70 Flat ridge, bears E. and W.

Descend 50 ft. to

33.00 Wash, 30 lbs. wide, drains W.

Ascend 50 ft. to

38.00 Ridge, bears E. and W.

Descend.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

Resurvey of the East Boundary of T. 20 S., R. 14 E.

chain

S 13 1/4 | S 18 ✓

1912. ✓

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., raise a mound of earth, 3 1/4 ft. base, 1 1/2 ft. high W. of cor.

From this point, the old 1/4 sec. cor. which is a sandstone 15 x 12 x 10 ins., bears S. 46° 50' E., 4.30 chs., I destroy old cor.

42.60 Wash, 10 lks. wide, 3 ft. deep, drains SW.

Ascend 25 ft. to

43.40 Ridge, bears E. and W.

Descend

50.00 Wash, 10 lks. wide, 3 ft. deep, drains SW.

Ascend 30 ft. to

61.00 Ridge, bears E. and W.

Descend.

75.50 Wash, 30 lks. wide, 5 ft. deep, drains W.

Ascend over stony ground.

80.00 Set an. iron post, 3 ft. long, 3 ins. in dia., 24 ins. in a mound of stone and earth 4 ft. base, 2 ft. high for cor. of secs. 7, 12, 13 and 18, with brass cap marked.

T 20 S

R 14 E | R 15 E

S 12 | S 7 ✓

S 13 | S 18

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

From this point, the old sec. cor., which is a sandstone, 12 x 10 x 8 ins., bears N. 83° E., 3.79 chs.; I destroy old cor.

Resurvey of the East boundary of T. 20 S., R. 14 E.

chains.

Land, mount airous draining SW,
Soil, rocky and clay; 4 th. rate.
Sub-soil, alkali clay and rocky
No timber.
No Undergrowth
Mount airous land 80.00 chs.
July 6, 1912.

July 10: At 7^h. 5^m. a.m. l.m.t.; I
set off 39° 05' on the lat. arc; 22° 16'
N. on the decl. arc; and determine
a meridian with the solar at the
cor. of sees. 7, 12, 13 and 18.

Thence I run

North, bet. sees. 7 and 12.

Over stony ground draining SW.

10.75 Wash, 20 lks. wide, 5 ft. deep,
drains SW.

Ascend 30 ft. to

15.00 Spur, projects SW.

Descend 30 ft. to

30.00 Wash, 10 lks. wide, 5 ft. deep, drains
SW.

Ascend.

34.70 Low ridge, bears E. and W.

Descend.

40.00 Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in the ground for 1/4
sec. cor., with brass cap marked.

S 12 1/4 S 7 ✓

1912

dig pits, 18 x 18 x 12 ins., N. and S. of
post, 3 ft. dist., raise a mound of
earth, 3 1/2 ft. base, 1/2 ft. high W. of cor.
No traces of the old cor. can be
found.

43.90 Wash, 30 lks. wide, 10 ft. deep,
drains NW.

Recovery of the East Boundary of T. 20 S., R. 14 E.

Chains.

- Ascend abruptly 75 ft. to
 47.60 Spur, projects W.
 Descend 50 ft. to
 56.00 Wash, 20 lks. wide, 3 ft. deep,
 drains SW.
 Ascend 40 ft. to
 59.50 Low ridge, bears E. and W.
 Descend 40 ft. to
 63.70 Wash, 20 lks. wide, 5 ft. deep,
 drains SW.
 Gradually ascend.
 80.00 Set an iron post, 3 ft. long, 3 ins. in
 dia., 24 ins. in the ground for
 cor. of secs. 1, 6, 7 and 12 with
 brass cap marked.

T 20 S	
R 14 E	R 15 E
S 1	S 6 ✓
S 12	S 7

1912

dig pits, 18 x 18 x 12 ins. in each sec.,
 5 1/4 ft. dist, raise a mound of
 earth 4 ft. base, 2 ft. high W. of cor.
 from this point, the old sec. cor
 which is a sandstone 12 x 12 x 8 ins.,
 bears N. 86 1/4° E., 3.63 chs. dist; I
 destroy old cor.

Land, broken mountainous drain-
 ing W.

Soil, stony and alkali clay; 4 th. rate
 sub-soil, shale.

No timber

No undergrowth.

Mountainous land 80.00 chs.

North, bet. secs 1 and 6.

Over broken land draining SW.,
 through short undergrowth of
 chadcale.

Ascend 30 ft. to

Resurvey of the East Boundary of T. 20 S., R. 14 E.

chain

- 9.40 Spur, projects W.
Descend 30 ft. to
- 13.00 Wash, 15 lks. wide, 2 ft. deep, drains SW.
Ascend 25 ft. to
- 17.40 Spur, projects SW.
Descend
- 19.00 Wash, 1 ch. wide, 3 ft. deep, drains SW.
Thence over land facing W.
- 29.00 Wash, 10 lks. wide, 2 ft. deep, drains SW.
- 36.50 Wash, 10 lks. wide, 3 ft. deep, drains SW.
- 40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S $1\frac{1}{4}$ | S 6 ✓

1912

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high W. of cor.

From this point, the old $\frac{1}{4}$ sec. cor. which is a sandstone 20 x 24 x 8 ins., bears N. 86° E., 3.77 chs.; I destroy old cor.

Ascend.

- 50.00 Low ridge, bears E. and W.
Descend 20 ft. to
- 51.50 Wash, 1 ch. wide, drains SW.
Ascend 30 ft. to
- 54.50 Spur, projects W.
Descend 40 ft. to
- 60.00 Wash, 8 lks. wide, 3 ft. deep, drains SW.
Ascend 35 ft. to
- 61.80 Spur, projects W.

Resurvey of the East Boundary of T. 20 S., R. 14 E.

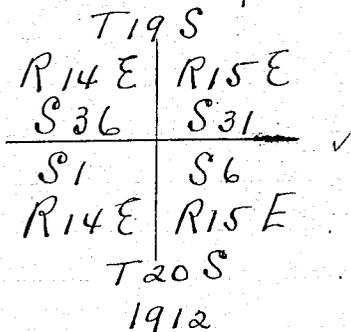
chains

Descend 50 ft to.

70.50 Wash in hollow, 30 lks. wide, drains SW.

Ascend.

80.00 Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for cor. of T's. 19 and 20 S., R's. 14 and 15 E., with brass cap marked.



raise a mound of stone, 2 ft. base, 1 1/2 ft. high S. of cor.

From this point the old tp. cor. which is a sandstone 24 x 12 x 10 ins. bears N. 87° E., 429 chs.; I destroy old cor.

Land, mountainous draining SW. Soil, gravelly, rocky and alkali clay; 4th. rate.

Sub-soil, rocky and hard shale. Undergrowth, some greasewood. No timber.

Mountainous land 80.00 chs.

Resurvey of the West Boundary of T. 20 S., R. 14 E.

Survey commenced July 6, 1912 and executed with a W. + L. E. Gurley solar compass No. 1043.

July 6: At my camp which is situated near the cor. of secs. 10, 11, 14 and 15, T. 20 S., R. 14 E., latitude 39° 05' N., longitude 110° 20' 45" W., I set off 39° 05' on the lat. arc; 22° 41' N. on the

Resurvey of the West Boundary of T. 20 S., R. 14 E.

chains

decl. arc; and at $5^{\text{h}}.04^{\text{m}}$ p.m. l.m.t., determine with the solar a meridian and mark a point in the line thereof on a stone, firmly set in the ground 5 chs. N. of my station.

July 6, 1912

July 7: At $12^{\text{h}}.33^{\text{m}}$ a.m. l.m.t., by my watch, I observe Polaris at eastern elongation in accordance with the Manual of Instructions and mark a point in the line thus determined on a peg driven firmly in the ground 5 chs. N. of my station.

At 7^{h} a.m. I lay off the azimuth of Polaris $1^{\circ}31'$ to the west and mark the true meridian thus determined by cutting a small groove in the stone set July 6., on which the meridian falls 0.4 chs. east of the mark determined with the solar.

At $7^{\text{h}}.34^{\text{m}}$ a.m. l.m.t., I set off $39^{\circ}05'$ on the lat. arc; $22^{\circ}37'$ N., on the decl. arc; and mark a point in the meridian; determined with the solar, by a cross on the stone already set 5 chs. N. of my station: this mark falls 0.3 chs. east of the meridian established by the Polaris observation.

The solar apparatus, by p.m. and a.m. observations, defines positions for true meridians, respectively about $0'21''$ west and $0'16''$ east of the meridian established by the Polaris observation.

I test my solar apparatus upon this Polaris meridian through out this entire day and find that it agrees with the Polaris meridian without the slightest variation.

Resurvey of the West boundary of T. 20 S., R. 14 E.

Chaus

July 7, 1912

July 8: At 9^h. 05^m. a.m. l.m.t., I set off 39° 02' on the lat. arc; 22° 29' N. on the decl. arc; and determine a meridian with the solar at the standard cor. of T. 20 S., R. 13 and 14 E. heretofore described.

Thence I run

North, resurveying bet. secs. 31 and 36. Over mountainous land draining E., through scattering cedar and piñon timber and undergrowth of shadscale.

- 9.50 Wash in Gulch, 25 ft. deep, drains E.
- 20.00 Wash in Gulch, 25 ft. deep, drains E.
- Ascend 30 ft. to
- 37.00 Top of red knoll on spur, projects E. Descend.
- 38.00 A sup of alkali water, bears E. 175 chs.
- 40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

S 36 1/4 | S 31 ✓

1912.

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

From this point, the old 1/4 sec. cor. a sandstone 18 x 12 x 6 ins., bears N. 54° W. 37 lks. dist.; I destroy old cor.

- 54.50 Wash, 8 lks. wide, 4 ft. deep, drains E.
- 60.25 Old wagon road, bears E. and W.
- 76.00 Wash, 50 lks. wide, 3 ft. deep, drains SE.
- Thence gradually ascend over land facing SW.
- 80.00 Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for cor.

Resurvey of the West boundary of T. 20 S., R. 14 E.

chains.

of secs. 25, 30, 31 and 36, with brass cap marked

T 20 S.	
R 13 E	R 14 E
S 25	S 30 ✓
S 36	S 31

1912.

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

From this point, the old sec. cor. a sandstone 20 x 16 x 4 ins., bears N. 63° W., 47 lks. dist; I destroy all traces of the old cor.

Land, mountainous with a general SE. drain.

Soil, rocky and sandy; 4 th. rate.

Sub-soil, gravelly and rocky.

Timber, some scrub-cedar and pinon.

Undergrowth, short shadscale.

Mountainous or timbered land 80.00 chs.

North, bet. secs. 25 and 30.

Over mountainous land draining SW. through scattering cedar timber and undergrowth of shadscale. Gradually ascend.

38.00 Spur, 75 ft. high, projects W.

Descend 20 ft. to

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins in a mound of stone and earth, 4 ft. base, 2 ft. high, for 1/4 sec. cor., with brass cap marked

S 25 1/4	S 30 ✓
----------	--------

1912

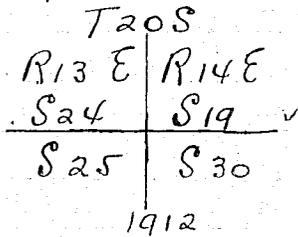
raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: on account of natural obstacles I am unable to set post in the ground.

Recovery of the West boundary of T.20 S., R.14 E.

chain.

- From this point, the old $\frac{1}{4}$ sec. cor. a sandstone $14 \times 4 \times 4$ ins., bears N. $70^{\circ} 15'$ W., 66 lks. dist., I destroy old cor.
- 44.00 Hollow, 50 ft. deep, drains W.
Ascend abruptly over ledges.
- 49.10 Ridge, 80 ft. high, bears E. and W.
Descend 75 ft. to
- 55.00 Hollow, drains N. 60° E.
Ascend 50 ft. to
- 65.00 Spur, projects NE.
Descend abruptly over ledges, 170 ft. to
- 75.00 Wash in Cotton wood Gulch, 1 ch. wide, drains E. Old wagon road bears E. and W.
Ascend 75 ft. to
- 79.00 Ridge, bears E. and W.
Descend
- 80.00 Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for cor. of secs. 19, 24, 25 and 30, with brass cap marked



raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.

After careful search no trace of the old sec. cor. can be found.

Land mountainous, draining SW. on S. 49.10 chs. and NE. to Cotton wood wash on N. 30.90 chs.

Soil, rocky and sandy on rocky sub-soil; 4 th. rate

Timber, scattering cedar.

Undergrowth short shadscale.

Land mountainous or heavily timbered 80.00 chs.

July 8: The sky is overcast at noon

Resurvey of the West Boundary of T. 20 S., R. 14 E.

chains

observations for lat. are impossible

North, bet. secs. 19 and 24.

Over mountainous land through scattering cedar timber.

Descend abruptly 75 ft. to

3.50 Hollow, drains E.

Ascend 40 ft. to

6.00 Spur, projects E.

Descend 35 ft. to

8.00 Enter wash in hollow, drains SE.

13.50 Leave wash, turns NE.

Ascend 50 ft. to

17.00 Spur, projects E.

Descend 40 ft. to

19.00 Same wash in hollow, drains E.

Ascend 50 ft. to

22.80 Spur, projects E.

Thence over broken land, gradually ascending across sandstone outcroppings.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked.

S 24 $\frac{1}{4}$ | S 19 ✓

1912

raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high W. of cor.

From this point, I find evident remains of the old cor 1.02 chs. W.: I destroy all traces of it.

50.00 Base of high rocky ridge, bears NW. and SE.

Ascend abruptly over ledges 300 ft. to

70.00 Top of ridge, bears W. and SE.

Descend over rocky land 75 ft. to

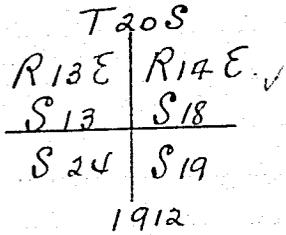
80.00 In hollow, drains SE.

Set an iron post, 3 ft. long, 3 in. in dia., 24 ins. in the ground for cor.

Recovery of the West boundary of T. 20 S., R. 14 E.

chain

of secs. 13, 18, 19 and 24 with brass caps marked



raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

From this point, the old cor. a mound of sandstone rocks, bears N. 70° W. 123 chs., I destroy all traces of it.

Land, mountainous with a general S.E. drain.

Soil, rocky; 1 th. rate.

Sub-soil, bed rock and rocky.

Timber, some cedar.

No undergrowth.

Mountainous or timbered land 80.00 chs.

July 8, 1912

July 9: At 8^h. 35^m. a.m. l.m. t., I set off 39° 03' on the lat. arc; 22° 23' N., on the decl. arc; and determine a meridian with the solar at the cor. of secs. 13, 18, 19 and 24

Thence I run

North, bet. secs. 13 and 18.

Over mountainous land, through forest of scrub cedar and pinon.

Ascend 60 ft. to

7.60 Rocky spur, projects E.

Gradually descend over rocky land facing N.

110.00 In hollow, drains NE.

Set an iron post, 3 ft. long, 1 in. dia., 24 ins. in the ground for 1/4" sec. cor., with brass cap marked

Resurvey of the West Boundary of T. 20 S., R. 14 E.

chains

S 13 1/4 | S 18 ✓
1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

From this point, the old 1/4 sec. cor., a sandstone 18 x 12 x 2 ins., bears West, 1.29 chs.; I destroy old cor.

Ascend 30 ft. to

45.00 Low flat ridge, bears E. and W.

descend 50 ft. to

53.10 Wash in hollow, 30 lks. wide, drains SE.

Ascend abruptly over rocky land facing SW.

77.30 Top of high ridge, 250 ft. above hollow, bears NW. and SE.

Thence over broken rocky land of conglomerate formation, facing E.

80.00 Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 7, 12, 13 and 18, with brass cap marked

T 20 S
R 13 E | R 14 E
S 12 | S 7 ✓

S 13 | S 18
1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

After a careful search I am unable to find any trace of the old sec. cor. Land, mount airous draining SE.

Soil, rocky; 4 th. rate.

Sub-soil, rocky.

Timber, scrub cedar and piñon.

Resurvey of the West Boundary of T. 20 S., R. 14 E.

Chains

No Undergrowth.

Land. mountainous or heavily timbered
8000 chs.

North, bet. secs. 7 and 12.

Over mountainous land draining
East, through scrub cedar and pine
timber.

4.00 Hollow, 30 ft. deep, drains E.

Ascend 30 ft. to

9.00 Spur, projects E.

Descend 75 ft. to

24.10 Hollow, drains E.

Ascend 50 ft. to

27.00 Top of north side of hollow, bears E.
and W.

Gradually descend over rocky land.

40.00 Set an iron post, 3 ft. long, 1¹/₂ in
dia, 24 ins. in a mound of stone and
earth, 4 ft. base, 2 ft. high for ¹/₄ sec.
cor., with brass cap marked

S 12 ¹/₄ | S 7 ✓

1912

raise a mound of stone, 2 ft. base,
1¹/₂ ft. high W. of cor.

Note: On account of natural obstacles
I am unable to set post in the ground.
After a careful search I am unable to
find any trace of the old ¹/₄ sec. cor.

50.00 Begin steep descent into canyon
over huge conglomerate boulders.

55.00 Wash in canyon, 25 lks. wide, 100
ft. below top, drains E.

Ascend 100 ft. to

60.50 Top of n. side of canyon, bears E.
and W.

Gradually descend.

75.00 Leave timber and rocky land, bears
NW. and SE.

Resurvey of the West Boundary of T. 20 S., R. 14 E.

chains.

80.00

Thence over open land facing E.
Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for. cor. of secs. 1, 6, 7 and 12 with brass cap marked

T 20 S	
R 13 E	R 14 E
S 1	S 6 ✓
S 12	S 7

1912.

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

From this point the old sec. cor. a sandstone 18 x 16 x 3 ins., bears N. 31° W., 99 lbs. dist.; I destroy old cor.

Land, mountinous with a general east drain.

Soil, rocky of conglomerate formation and gravelly. 4th, late

Sub-soil, rocky.

Timber, scrub cedar and piñon on S. 75 chs.

No Undergrowth.

Land mountainous or heavily timbered 80.00 chs.

July 9: At this sec. cor., I set off 22° 21' N. on the decl. arc; and at 12^h 05^m. P. m. l. m. t., observe the sun on the meridian; the resulting lat. is 39° 05'

North, bet. secs. 1 and 6.

Over mountainous land draining East, through short undergrowth of shadscale.

5.00

Enter scattering scrub cedar and piñon timber, bears NE. and SW.

15.00

Enter rocky land and huge conglomerate boulders, bears NE. and SW.

Ascend.

Resurvey of the West boundary of T. 20 S., R. 14 E.

Chassis.

- 22.00 Low ridge, bears E. and W.
Descend
- 33.70 Wash in hollow, 50 ft. deep, drains
E.
Ascend
- 40.00 Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in the ground for $\frac{1}{4}$
sec. cor., with brass cap marked.

S 1 $\frac{1}{4}$	S 6 ✓
-------------------	-------

1912

raise a mound of stone, 2 ft. base,
 $1\frac{1}{2}$ ft. high W. of cor.
After a careful search I am unable
to find any trace of the old $\frac{1}{4}$ sec. cor.

- 41.90 Spur, projects E.
Descend
- 66.00 Begin abrupt descent into canyon,
over huge boulders.
- 71.90 Wash in canyon, 100 ft. below top,
drains E.
Descend abruptly 75 ft. to
- 78.00 Spur, projects E.
Descend 50 ft. to.
- 80.00 Amongst huge conglomerate boulders.
Set an iron post, 3 ft. long, 3 in. in
dia., 24 ins. in a mound of stone
and earth, 4 ft. base, 2 ft. high for
cor. of Ts. 19 and 20 S., Rs. 13 and 14
E., with brass cap marked

T 19 S	
R 13 E	R 14 E
S 36	S 31 ✓
S 1	S 6
R 13 E	R 14 E

T 20 S

1912

raise a mound of stone, 2 ft. base,
 $1\frac{1}{2}$ ft. high S. of cor.

Resurvey of the West boundary of T. 20 S., R. 14 E.

chains.

Note: on account of natural obstacles I am unable to set post in the ground. After a long and careful search, I am unable to find any trace of the old tp. cor.

Land, mount airous draining E.

Soil, rocky; 4 th. rate.

Sub-soil, rocky.

Timber, scrub-cedar and pinon on N. 75 chs.

Undergrowth short shade-scale.

Land mount airous or heavily timbered 80.00 chs.

July 9, 1912

Resurvey of the North Boundary
of T. 20 S., R. 14 E.

July 10: For solar observation, see line bet. secs. 7 and 12, E. bdy. of this tp.

From the cor. of Ts. 19 and 20 S., R. 14 and 15 E.

I run

West, on a random line along the north boundary of the tp, setting temp. $\frac{1}{4}$ sec. and sec. cor. at intervals of 40.00 chs.

40.00 July 10: At this station I set off $22^{\circ} 14'$ N. on the decl. arc; and at $12^{\text{h}} 05^{\text{m}}$ a. m. l. m. t., observe the sun on the meridian; the resulting lat. is $39^{\circ} 07'$.

240.00 Cease work.

July 10, 1912.

July 11: At $7^{\text{h}} 05^{\text{m}}$ a. m. l. m. t., I set off $39^{\circ} 07'$ on the lat. arc; $22^{\circ} 09'$ N. on the decl. arc; and determine a meridian with the solar at this station.

chains

Thence I continue West, on random line and at 480.47 chs. intersect N. and S. line 1.54 chs. S. of the cor. of T's 19 and 20 S., R's 13 and 14 E. heretofore described. This falling answers to a correction of $0^{\circ} 11'$ or 25.6 lks. N. per mile counting from the NE. cor. of the tp.;

therefore I run S. $89^{\circ} 49'$ E., bet. secs. 6 and 31.

Over rough mountainous land through scattering scrub cedar timber.

Descend abruptly over huge conglomerate boulders.

2.50 Saleratus Creek wash, 2 chs. wide, some alkali water, 75 ft. below tp. cor., drains SE.

Thence ascend over rocky SW. slope of high ridge across solid bed rock of conglomerate stone

5.00 July 11: At this station I set off $22^{\circ} 06'$ N., on the decl. arc; and at $12^{\text{h}} 05^{\text{m}}$ p.m. l.m. t., observe the sun on the meridian; the resulting lat. is $39^{\circ} 07'$.

40.47 350 ft. above wash.

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor. with brass cap marked

S 31

1/4

S 6

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.

Note: On account of natural obstacles I am unable to set post in the ground.

Runway of the north boundary of T. 20 S., R. 14 E.

Chaus.

From this point the old $\frac{1}{4}$ sec. cor. which is a sandstone $10 \times 8 \times 8$ ins., bears $N. 15^\circ W.$, 3.28 chs. dist.; I destroy old cor.

53.00 Top of high ridge, 375 ft. above wash, bears NW. and SE.

Gradually descend along gently easterly slope.

80.47 Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 5, 6, 31 and 32, with brass cap marked

T19 S	R14 E
S31	S32 ✓
S6	S5
T20 S	
1912.	

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.

Note: on account of natural obstacles I am unable to set post in the ground.

From this point, the old sec. cor., which is a sandstone $19 \times 11 \times 7$ ins., bears $N.$ 2.44 chs. dist.; I destroy all traces of the old cor.

Land mountainous.

Soil, rocky and solid bed-rock; 4th. rate.

Timber, scrub cedar.

No undergrowth.

Land, mountainous or heavily timbered 80.47 chs.

S. $89^\circ 49'$ E., bet. secs. 5 and 32.

Over mountainous land through scattering scrub cedar and pixon and undergrowth of shade-scale. Gradually descend.

Resurvey of the north boundary of T. 20 S., R. 14 E.

Chains

13.10 Hollow, 50 ft. deep, drains NE.
Ascend 30 ft. to
38.00 Long spur, projects NE.
Thence descend over eastern slope
of mountain.

40.00 Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in the ground for $\frac{1}{4}$
sec. cor. with brass cap marked

S 32
<u> </u>
1/4 ✓
S 5
1912

raise a mound of stone, 2 ft. base,
 $1\frac{1}{2}$ ft. high N. of cor.
From this point, the old $\frac{1}{4}$ sec. cor.
which is a sandstone $14 \times 6 \times 6$ ins. bears
N. 3.14 chs., I destroy all traces of
the old cor.

55.00 Hollow, 80 ft. deep, drains NE.
Ascend 30 ft. to

58.00 Spur, projects NE.
Descend 75 ft. to

70.00 Hollow, drains NE.
Ascend 30 ft. to

80.00 Low ridge, bears NE. and SW
Set an iron post, 3 ft. long, 3 ins. in
dia., 24 ins. in the ground for cor.
of secs. 4, 5, 32 and 33, with brass
cap marked.

T 19 S	R 14 E
<u>S 32</u>	<u>S 33</u> ✓
S 5	S 4
T 20 S	

1912.

raise a mound of stone, 2 ft. base,
 $1\frac{1}{2}$ ft. high W. of cor.
From this point the old sec. cor. a
sandstone $12 \times 12 \times 7$ ins., bears N. 20° E.
368 chs. dist., I destroy old cor.
Land mountainous with a general

Resurvey of the north boundary of T. 20 S., R. 14 E.

Chains

NE. drain.

Soil, rocky; 4 th. rate.

Sub-soil, rocky.

Timber, some scattering cedar and piñon.

Undergrowth, short shadscale.

Mountainous land 8000 chs.

S. 89° 49' E., bet. secs. 4 and 33.

Over mountainous land, through short undergrowth of shadscale.

Descend 75 ft. to

15.50 Hollow, drains SE.

Ascend 40 ft. to

18.00 Ridge, bears N. and SE.

Descend 100 ft. to

39.00 Wash, in hollow, 2 chs. wide, drains S. 20° E.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

S 33

1/4 ✓

S 4

1912.

raise a mound of stone, 2 ft. base, 1 1/2 ft. high N. of cor.

From this point the old 1/4 sec. cor., a sandstone 24 x 10 x 10 ins., bears N. 20° 15' E., 343 chs. dist.; I destroy old cor.

Ascend 30 ft. to

45.00 Spur, projects S.

Thence over rolling clay hills. descend.

55.00 Hollow, drains SW.

Ascend 25 ft. to

64.00 Low clay ridge, bears N. and S.

Descend gradually.

80.00 Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for cor. of secs. 3, 4, 33 and 34 with brass

Resurvey of the north boundary of T. 20.S., R. 14.E.

Chauce.

Cap: marked

T19S	R14E
S33	S34 ✓
S4	S3
T20S	
1912	

dig pits, 18 x 18 x 12 ins. in each sec.,
5 1/2 ft. dist.; raise a mound of earth
4 ft. base, 2 ft. high W. of cor.

From this point, the old sec. cor., a
sandstone 14 x 7 x 4 ins., bears N. 31° 50'
E., 272 ch. dist.; I destroy old cor.

Land mountainous and hilly
with a general south drain.

Soil rocky and alkali clay on rock
and clay sub-soil; 4th rate.

No timber.

Undergrowth, short shadscale.

Mountainous land on W. 45 ch.

S. 89° 49' E., bet. secs. 3 and 34.

Gradually descend over rolling
land sloping east, through short
undergrowth of shadscale.

30.00 Wash, 10 lks. wide, 5 ft. deep,
drains S.

33.75 Large wash, 50 lks. wide, 8 ft.
deep, drains S.

40.00 Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in the ground for 1/4
sec. cor., with brass cap marked

S34
1/4 ✓
S3

1912

dig pits, 18 x 18 x 12 ins., E. and W.
of post, 3 ft. dist., raise a mound
of earth, 3 1/2 ft. base, 1 1/2 ft. high,
N. of cor.

From this point, the old 1/4 sec. cor.,

Resurvey of the north boundary of T. 20 S., R. 14 E.

Chains

- a sandstone 10 x 8 x 4 ins., bears N. 41° E. 3.30 chs. dist.; I destroy old cor.
- 68.00 Wagon road from Green river, Utah to Price, Utah, bears N. and S.
- 70.96 Center of the Denver and Rio Grande railroad track, bears N. 13° 45' W. and S 13° 45' E.
- 71.50 Telegraph line, bears N. 13° 45' W. and S 13° 45' E.
- Gradually ascend.
- 80.00 Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for cor. of sees. 2, 3, 34 and 35, with brass cap marked

T 19 S	R 14 E
S 34	S 35 ✓
S 3	S 2

T 20 S

1912

dig pits, 18 x 18 x 12 ins. in each sec. 5 1/2 ft. dist.; raise a mound of earth 4 ft. base, 2 ft. high W. of cor. From this point, the old sec. cor. a sandstone 18 x 6 x 3 ins., bears N. 51° 39' E., 3.65 chs. dist.; I destroy old cor.

Land, rolling draining S.

Soil, clay; 3rd rate.

Sub-soil, hard shale.

No timber

Undergrowth, short shadscale.

S. 89° 49' E., bet. sees. 2 and 35 Over rolling clay hills, draining W. through short undergrowth of shadscale.

Gradually ascend

9.00 Low ridge, bears N. and S.

Gradually descend

20.00 Wash, 10 lks. wide, 2 ft. deep.

Recovery of the north boundary of T. 20 S., R. 14 E.

chains.

- drains S. 20° W.
 Ascend
 29.00 Spur, projects S.
 Descend
 32.20 Wash, 20 lks. wide, 3 ft. deep,
 drains SW.
 Ascend
 40.00 Set an iron post, 3 ft. long, 1 in. in
 dia., 24 ins. in the ground for 1/4
 sec. cor., with brass cap marked

S ^o 35
1/4

S 2
1912

dig pits, 18 x 18 x 12 ins., E. and W.
 of post, 3 ft. dist, raise a mound
 of earth, 3 1/4 ft. base, 1 1/2 ft. high N.
 of cor.

From this point the old 1/4 sec. cor.
 a sandstone, 12 x 8 x 2 ins, bears
 N. 60° E., 3.85 chs. I destroy old cor.

- 43.10 Spur, projects S.
 Descend
 50.00 Wash, 20 lks. wide, 8 ft. deep,
 drains S.
 55.00 Wash 10 lks. wide, 4 ft. deep,
 drains SW.

- 80.00 Set an iron post, 3 ft. long, 3 ins.
 in dia., 24 ins. in the ground for
 cor. of secs. 1, 2, 35 and 36, with
 brass cap marked

T19S	R14E
S35	S36 ✓
-----	-----
S 2	S 1
T 20 S	
1912	

raise a mound of stone, 2 ft. base,
 1 1/4 ft. high W. of cor.
 From this point the old sec. cor.
 a sandstone 18 x 18 x 6 ins, bears

Resurvey of the north boundary of T. 20 S., R. 14 E.

chains

N. $65^{\circ} 15' E.$, 4.15 chs.; I destroy old cor.
Land rolling with a general S.
drain.

Soil, clay; 3rd. rate.

Sub-soil, hard shale.

No timber.

Undergrowth, short shadscale

S. $89^{\circ} 49' E.$, bet. secs. 1 and 36.

Over rolling clay hills draining S,
through short undergrowth of
shadscale.

Ascend 30 ft. to

4.15 Ridge, bears NE. and SW.

Gradually descend

22.10 Wash, 20 lks. wide. 3 ft. deep,
drains SW.

40.00 Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in the ground for $\frac{1}{4}$
sec. cor., with brass cap marked

S 36
1/4 ✓

S 1

1912 ✓

dig pits, $18 \times 18 \times 12$ ins., E. and W. of
post 3 ft. dist, raise a mound of
earth $3\frac{1}{4}$ ft. base, $1\frac{1}{2}$ ft. high N. of
cor.

From this point the old $\frac{1}{4}$ sec. cor.
a sandstone $12 \times 10 \times 8$ ins., bears
N. $72^{\circ} 15' E.$, 4.00 chs; dist.; I destroy
old cor.

Ascend 30 ft. to

46.30 Spur, projects SW.

Descend

48.00 Wash in hollow, 25 ft. deep, drains
SW.

Ascend 40 ft. to

54.70 spur, projects S.

Descend 40 ft. to

Resurvey of the north boundary of T. 20 S., R. 14 E.

Chains.

- 58.00 Wash in hollow, drains SW.
Ascend 25 ft. to
- 60.00 Spur, projects SW.
Descend 60 ft. to
- 62.00 Wash in hollow, drains SW.
Ascend 45 ft. to
- 65.00 Spur, projects SW.
Descend 50 ft. to
- 66.30 Hollow, drains SW.
Ascend 50 ft. to
- 69.50 Spur, projects SW.
Descend 50 ft. to
- 71.00 Wash in hollow, drains SW.
Ascend 50 ft. to
- 73.00 Spur, projects SW.
Descend 50 ft. to
- 76.50 Hollow, drains SW.
Ascend 50 ft. to
- 80.00 The cor. of Ts. 19 and 20 S., Rs. 14 and 15 E.

Land rolling and broken mountainous with a general SW. drain.

Soil, clay and rocky; 4 th. rate.
Sub-soil, hard shale and rocky.
No timber

Undergrowth, short shadeless.

Mountainous land on E. 40.00 chs.

July 11, 1912

Boundaries of T. 20 S., R. 14 E.

Lines Designated	True Bearings	Dist- ances	Latitudes		Departures	
			N.	S.	E.	W.
E. Boundary	South	480.00		480.00		
S. 1/2	West	40.00				40.00
S. 36, W. 1/2	N. 89° 55' W	40.00	.06			40.00
S. 35, E. 1/2	N. 89° 53' W	399.4	.08			39.94
S. 35, W. 1/2	N. 89° 55' W	40.16	.06			40.16
S. 34	N. 89° 51' W	80.15	.21			80.15
S. 33, E. 1/2	N. 89° 51' W	40.00	.10			40.00
S. 33, W. 1/2	N. 89° 45' W	40.00	.17			40.00
S. 32, E. 1/2	N. 89° 40' W	40.36	.23			40.36
S. 32, W. 1/2	S. 89° 59' W	40.00		.01		40.00
S. 31, E. 1/2	N. 89° 56' W	40.35	.05			40.35
S. 31, W. 1/2	N. 89° 55' W	40.20	.06			40.20
W. Body	North	480.00	480.00			
N. Body	S. 89° 49' E	480.47		1.54	480.47	
Convergence						.59
			481.02	481.55	481.06	481.76
				481.02		481.06
Errors in lat. and dep.				.53		.10

For General description, see book "B" of this survey.

Howard W. Miller
U. S. Surveyor.

E.R.

Blank

Page

Subdivision of T. 20 S., R. 14 E.

chains.

Survey commenced July 11, 1912 and executed with a W. and P. E. Gurley solar compass No. 1043.

For description and test of instrument see book "A" of this survey.

I examine the adjustments of the compass and correct the level and collimation errors; then, to test the solar apparatus by comparing its indications, resulting from solar observations made during p. m. and a. m. hours, with a meridian established by observations on Polaris I proceed as follows:

At my camp which is situated near the cor. of secs. 10, 11, 14 and 15 in approximate lat. $39^{\circ}05' N.$, longitude $110^{\circ}20'45'' W.$, I place my instrument on a true meridian, established by observations on Polaris July 7, 1912, (For notes of Polaris observation see page "1.")

At $4^h.35^m$ p. m. l. m. t., I set off $39^{\circ}05'$ on the lat. arc; $22^{\circ}35' N.$, on the decl. arc; and determine a meridian with the solar. This solar meridian coincides with the meridian established by observations on Polaris July 7.
July 11, 1912.

July 12: At $7^h.05^m$ a. m. l. m. t., I set off $39^{\circ}05'$ on the lat. arc; $22^{\circ}00' N.$, on the decl. arc; and determine a meridian with the solar. This meridian also agrees with the Polaris meridian and the solar meridian of July 11, I therefore conclude that the instrument is in perfect adjustment.

Subdivision of T. 20 S., R. 14 E.

Chauis

2715. 40 U.S.G. & G.S.
 Regulation Station Salaratus
 page 14.

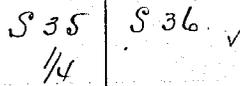
I commence at the standard cor. of secs. 35 and 36 on the S. bdy. of the tp. heretofore described.

Thence I run

N. 0° 01' W., bet. secs. 35 and 36.

Gradually ascend over gently rolling land, through short undergrowth of shadscale.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked.



1912.

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist; raise a mound of earth $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high W. of cor.

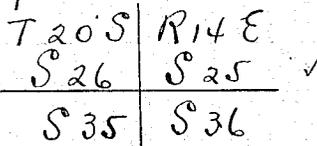
63.80 Wagon road, from Green river, Utah to Price, Utah, bears N. 10° W., and S. 10° E.

72.60 Center of the Denver and Rio Grande railroad track, bears N. 11° 24' W. and S. 11° 24' E.

Note: A curve on the railroad track starts about 8 chs. S.

75.20 Telegraph line, bears N. 11° 24' W. and S. 11° 24' E.

80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 25, 26, 35 and 36, with brass cap marked



1912.

dig pits, 18 x 18 x 12 ins., in each sec. $5\frac{1}{2}$ ft. dist, raise a mound of earth 4 ft. base, 2 ft. high W. of cor.

land gently rolling with a general drain to the west

Subdivision of T. 20 S., R. 14 E.

chains

Soil, a light clay and gravelly on hard dry clay and shale sub-soil; 3rd. rate.
No timber.
Undergrowth, short shade-scale.
Some short grass for grazing.

S. $89^{\circ}58'$ E., on random line bet. sees. 25 and 36.

40.00

Set temporary $\frac{1}{4}$ sec. cor.

79.99

Int. used the E. bdy. of the tp. 3 lks. N. of the cor. of sees. 25, 30, 31 and 36, heretofore described.

Thence I run

N. $89^{\circ}57'$ W., on true line bet. sees. 25 and 36.

Over rolling clay hills draining S., through scattering undergrowth of short shade-scale.

20.90

Wash, 10 lks. wide, 4 ft. deep, drains S.

25.15

Wash, 15 lks. wide, 3 ft. deep, drains SW.

39.99

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor. with brass cap marked

S 25
1/4 ✓

S 36

1912

dig pits, $18 \times 18 \times 12$ ins., E. and W. of post, 3 ft. dist; raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.

Gradually ascend

72.50

Ridge, 50 ft. high, bears N. and S. Descend 50 ft. to

79.99

The cor. of sees. 25, 26, 35 and 36, land hilly with a general drain to the S. on E. 72.50 chs. and W. on

5000 1355

Subdivision of T. 20 S., R. 14 E.

chains

7.49 chs.

Soil, clay and gravelly on hard dry clay and shale sub-soil; 3rd. rate.

Undergrowth, short shadscale.

No timber.

Some good grass for grazing on W 4000 chs.

N. 0° 01' W., bet. secs. 25 and 26.

Gradually ascend over rolling land draining SW., through short undergrowth of shadscale.

22.70

The 565 th. mile post on the Denver and Rio Grande railroad track, bears N. 77° 20' W., 6.30 chs. dist ant.

40.00

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S 26		S 25
$\frac{1}{4}$		✓

1912 /

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., raise a mound of earth, 3 $\frac{1}{2}$ ft. base, 1 $\frac{1}{2}$ ft. high W. of cor.

80.00

Set an iron post, 3 ft. long, 2 in. in dia., 24 ins. in the ground for cor. of secs. 23, 24, 25 and 26 with brass cap marked

T 20 S		R 14 E
S 23		S 24 ✓
S 26		S 25

1912

dig pits, 18 x 18 x 12 ins., in each sec. 5 $\frac{1}{2}$ ft. dist., raise a mound of earth, 4 ft. base, 2 ft. high W. of cor. Land, rolling with a general SW.

Subdivision of T. 20 S., R. 14 E.

chains

drain.
 Soil, clay and gravelly on hard shale sub-soil; 3rd. rate.
 No timber.
 Undergrowth, short shade-scale.
 Some good grass for grazing purposes.

S. $89^{\circ}57'$ E., on random line bet. secs. 24 and 25

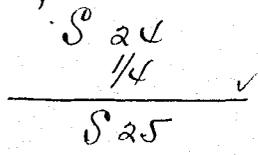
40.00 Set temporary $\frac{1}{4}$ sec. cor.
 80.01 Intersect E. bdy. of the tp. 3 lks. S. of the cor. of secs. 19, 24, 25 and 30 heretofore described.

Thence I run N. $89^{\circ}58'$ W., on true line bet. secs. 24 and 25.

Over rolling clay hills draining S., through short undergrowth of shade-scale.

1.55 Wash, 10 lks. wide, 5 ft. deep, drains S. 8 chs. thence SW.
 10.60 Wash, 15 lks. wide, 10 ft. deep, drains S. 20° W.
 12.95 Wash, 10 lks. wide, 11 ft. deep, drains S. 20° E.

40.00^{1/4} Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked



1912

dig pits, 18 x 18 x 12 ins. E. and W. of post, 3 ft. dist.; raise a mound of earth $3\frac{1}{4}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.

Gradually ascend.

71.20 Top of ridge, 35 ft. high, bears N. and S.
 Descend 35 ft. to

Subdivision of T. 20 S., R. 14 E.

Chauss

80.01 The cor. of secs. 23, 24, 25 and 26.
Land, hilly with a general drain
to the south on E. 71. 20 che. and
W. on S. 81 che.

Soil, clay and gravelly; 3 rd. rate.
Sub-soil, hard, dry clay and shale.
No timber
Undergrowth short shadscale.

Some grass for grazing purposes

N. 0° 01' W., bet. secs. 23 and 24.
Over rolling land draining SW,
through short undergrowth of
shadscale.

21.50 Wash, 10 lks. wide, 5 ft. deep,
drains SW.

24.40 Wash, 30 lks. wide, 10 ft. deep,
drains SW.

34.50 Wash, 10 lks. wide, 3 ft. deep,
drains SW.

110.00 Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in the ground for $\frac{1}{4}$
sec. cor., with brass cap marked

S 23 | S 24 ✓
 $\frac{1}{4}$

18x18x12 ins. 1912
dig pits, N. and S. of post, 3 ft. dist,
raise a mound of earth, $3\frac{1}{2}$ ft. base,
 $1\frac{1}{2}$ ft. high W. of cor.

July 12: At this cor. I set off $21^{\circ} 58'$
N, on the decl. arc; and at $12^{\text{h}} 05^{\text{m}}$
p.m. l.m.t., observe the sun on
the meridian; the resulting lat. is
 $39^{\circ} 04'$

57.00 Wash, 20 lks. wide, 5 ft. deep,
drains SW.

80.00 Set an iron post, 3 ft. long, 2 in. in
dia., 24 ins. in the ground for cor.

Subdivision of T. 20 S., R. 14 E.

chains

of secs. 13, 14, 23 and 24 with brass cap marked

T 20 S	R 14 E
S 14	S 13 ✓
S 23	S 24

1912

dig pits, 18 x 18 x 12 ins., in each sec. 5 1/2 ft. dist.; raise a mound of earth 4 ft. base, 2 ft. high W. of cor. Land, rolling with a general W. drain

Soil, Clay; 3 rd. rate.

Sub-soil, hard clay and shale.

No timber.

Undergrowth, short shadscale.

S. 89° 58' E., on random line bet. secs. 13 and 24

40.00 Set temporary 1/4 sec. cor.

80.06 Intersect E. bdy of the tp. 5 lks. N. of the cor. of secs. 13, 18, 19 and 24 heretofore described.

Thence I run

N. 89° 56' W., on true line bet. secs. 13 and 24.

Over mountainous land draining SW., through short undergrowth of shadscale.

5.00 Descend 50 ft. to wash in hollow, 15 lks. wide, drains S.W.

9.50 Ascend abruptly 100 ft. to spur, projects SW.

16.30 Descend 80 ft. to wash in hollow, 10 lks. wide, course SW.

22.10 Ascend 75 ft. to spur, projects SW. Gradually descend.

40.03 Set an iron post, 3 ft. long, 1 in. in

Subdivision of T. 20 S., R. 14 E.

Chaus

dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S¹³

$\frac{1}{4}$ ✓

S²⁴

1912

dig pits, 18. x 18 x 12 ins., E. and W. of post, 3 ft. dist, raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.

41.20 Wash, 8 lks. wide, 3 ft. deep, drains SW.

Ascend 30 ft. to

69.10 Clay ridge, bears N. and S. descend.

73.50 Wash, 20 lks. wide, 10 ft. deep, drains SW.

Gradually ascend

80.06 The cor. of secs. 13, 14, 23 and 24.

Land, mountainous with a general SW. drain.

Soil, clay and rocky; 4 th. rate.

Sub-soil, hard shale.

No timber.

Undergrowth, short shade-scale.

Mountainous land 80.06 chs.

July 12, 1912

July 13: At 8^h. 05^m. a.m. l.m.t.; I set off 39° 04' on the lat. arc; 21° 51' N., on the decl. arc; and determine a meridian with the solar at the cor. of secs. 13, 14, 23 and 24.

Thence I run

N. 0° 01' W., bet. secs. 13 and 14.

Over rolling land draining SW., through short undergrowth of shade-scale.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$

Subdivision of T. 20 S., R. 14 E.

Chains

sec. cor., with brass cap marked

S 14	S 13 ✓
1/4	

1912

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist.; raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high W. of cor.

68.00 Wash, 25 lbs. wide, 5 ft. deep, drains SW.

80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 11, 12, 13 and 14, with brass cap marked

T 20 S	R 14 E
S 11	S 12 ✓
S 14	S 13

1912

dig pits, 18 x 18 x 12 ins., in each sec., 5 1/2 ft. dist.; raise a mound of earth, 4 ft. base, 2 ft. high W. of cor. Land rolling with a general SW. drain.

Soil, alkali clay and gravelly; 4th. rate.

Sub-soil, hard shale.

No timber.

Undergrowth, short shadscale

S. 89° 56' E., on random line bet. secs. 12 and 13.

40.00 Set temporary 1/4 sec. cor.

80.10 Intersect E. bdy of the tp. 7 lks. S. of the cor. of secs. 7, 12, 13 and 18 heretofore described

Thence I run

N. 89° 59' W., on true line bet. secs. 12 and 13.

Gradually descend over stony

Subdivision of T. 20 S., R. 14 E.

Chains

- ground.
- 20.10 Leave stony ground, enter rolling clay hills, bears NE. and SW.
- 40.05 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked
- S 12

1/4 ✓
- S 13
1912
- dig pits, 18 x 18 x 12 ins. E. and W., of post, 3 ft. dist.; raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.
- 66.70 Wash, 25 lbs. wide, 10 ft. deep, drains SW.
- 80.10 The cor. of secs. 11, 12, 13 and 14. Land, rolling with a general SW. drain.
- Soil, E. 20.10 chs. rocky on rocky sub-soil; 4 th. rate. W. 60 chs, soil, clay and gravelly on hard dry shale sub-soil; 3 rd. rate.
- No timber.
- Undergrowth, some short shadscale
-
- N. 0° 01' W., bet. secs. 11 and 12.
- Over rolling clay hills draining SW. through short undergrowth of shadscale.
- 27.50 Wash, 40 lbs. wide, 10 ft. deep, drains SW.
- Ascend 30 ft. to
- 37.00 Ridge, bears NW. and SE.
- Descent 20 ft. to
- 39.00 Head of wash, drains SE.
- Ascend.
- 40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

Subdivision of T. 20 S., R. 14 E.

chains

S ₁₁	S ₁₂
1/4	✓

1912

- raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.
- 51.00 Same ridge, Bears NE. 5 ch. and SW. Thence descend over blue clay land sloping W.
- 80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs, 1, 2, 11 and 12 with brass cap marked

T20 S	R14 E
S ₂	S ₁ ✓
S ₁₁	S ₁₂

1912

dig pits, 18 x 18 x 12 ins. in each sec. 5 1/2 ft. dist.; raise a mound of earth 4 ft. base, 2 ft. high W. of cor. Land, hilly with a westerly drain. Soil, clay and gravelly; 3rd. rate. Sub-soil, hard shale. No timber. Undergrowth, short shadscale. July 13: The sky is overcast at noon observations for lat. are impossible

- S. 89° 59' E., on random line bet. secs 1, and 12.
- 40.00 Set temporary 1/4 sec. cor.
- 80.20 Intersect E. bdy. of the tp. at the cor. of secs. 1, 6, 7 and 12 heretofore described. Thence I run N. 89° 59' W., on true line bet. secs. 1 and 12. Over rolling clay hills draining SW., through short undergrowth of shadscale.

Subdivision of T. 20 S., R. 14 E.

Chain

- Gradually ascend
- 26.40 Low spur, projects SW.
Ascend 35 ft. to
- 34.20 Wash, 15 lks. wide, 10 ft. deep,
drains SW.
Ascend.
- 40.10 On east slope of ridge.
Set an iron post, 3 ft. long, 1 in. in
dia., 24 in. in the ground for $\frac{1}{4}$
sec. cor., with brass cap marked
S₁
 $\frac{1}{4}$ ✓
S₁₂
1912
- raise a mound of stone, 2 ft. base,
1 1/2 ft. high, N. of cor.
- 42.00 Ridge, 40 ft. high, bears N. and S.
Ascend 40 ft. to
- 50.20 Wash, 10 lks. wide, 5 ft. deep,
drains SW.
Ascend 50 ft. to
- 53.50 Narrow spur, projects SW.
Ascend 50 ft. to
- 60.00 Wash, 25 lks. wide, 10 ft. deep,
drains SW.
- 67.00 Wash, 10 lks. wide, 5 ft. deep,
drains S.
- 80.20 The cor. of secs. 1, 2, 11 and 12.
Land, mountainous draining SW.
Soil, clay and gravelly; 3rd. rate.
Sub-soil, hard shale rocks and rocky.
No timber.
Undergrowth, short shadecale.
Some good grass for grazing
Mountainous land 80.26 chs.
- N. 0° 01' W., on random line bet. secs.
1 and 2.
- 110.00 Set temporary $\frac{1}{4}$ sec. cor.
- 80.27 Intersect N. bdy. of the tp. 30 lks.

Subdivision of T. 20 S., R. 14 E.

Chaus

N. $89^{\circ}49'$ W. of the cor. of secs. 1, 2, 35
and 36 heretofore described.

Thence I run

S. $0^{\circ}12'$ W., on true line bet. secs. 1 and
2.

Over hilly land draining SW.,
through short undergrowth of shade-
scale ascend 50 ft. to

3.70 Clay ridge, bears NE. and SW.

Gradually descend 35 ft. to

30.30 Wash, 10 lks. wide, 4 ft. deep,
drains SW.

Gradually ascend.

40.27 On low spur, projects SW.

Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in the ground for $\frac{1}{4}$ sec.
cor., with brass cap marked

S 2 | S 1
1/4 | ✓

1912

dig pits, 18 x 18 x 12 ins., N. and S.
of post, 3 ft. dist., raise a mound
of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high W.
of cor.

65.30 Wash, 8 lks. wide, 3 ft. deep,
drains SW.

70.25 Wash, 10 lks. wide, 5 ft. deep,
drains SW.

80.27 The cor. of secs. 1, 2, 11 and 12.

Land, hilly, draining SW.

Soil, clay and gravelly; 3rd. rate.

Sub-soil, hard, dry shale.

No timber.

Undergrowth short shade-
scale.

July 13, 1912

July 15: At 8^{h.} 06^{m.} a.m. l.m. t., I
set off $39^{\circ}02'$ on the lat. arc; $21^{\circ}33'$
N., on the decl. arc; and determine

Subdivision of T. 20 S., R. 14 E.

chain

a meridian with the solar at the standard cor. of sees, 34 and 35 on the S. bdy. of the tp. heretofore described
thence I run

N. 0° 01' W, bet. sees. 34 and 35.

Over rolling land draining E., through short undergrowth of shade tree.

18.00 Wash, 5 lks. wide, 5 ft. deep, drains E.

26.50 Wash, 6 lks. wide, 5 ft. deep, drains E.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked.

S 34	S 35 ✓
$\frac{1}{4}$	

1912

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist.; raise a mound of earth, 3 $\frac{1}{2}$ ft. base, 1 $\frac{1}{2}$ ft. high W. of cor.

55.00 Wash, 6 lks. wide, 3 ft. deep, drains E.

68.40 Wash, 10 lks. wide, 3 ft. deep, drains E.

75.00 Wash, 10 lks. wide, 3 ft. deep, drains E.

Ascend 20 ft to

80.00 On low spur projects E.

Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of sees. 26, 27, 34 and 35 with brass cap marked.

T 20 S	R 14 E
S 27	S 26 ✓
S 34	S 35

1912

dig pits, 18 x 18 x 12 ins. in each sec, 5 $\frac{1}{2}$ ft. dist., raise a mound of earth, 4 ft. base, 2 ft. high W. of cor. Land, rolling with a general E. drain.

Subdivision of T. 20 S., R. 14 E.

chains

Soil, gravelly, 3rd rate.
 Sub-soil, gravelly and hard shale.
 No timber.
 Undergrowth, short shade-scale.

S. $89^{\circ}54' E$, on random line bet. secs. 26 and 35

40.00 Set temporary $\frac{1}{4}$ sec. cor.

80.01 Intersect N. and S. line 2 lks. S. of the cor. of secs. 25, 26, 35 and 36.

Thence I run

N. $89^{\circ}55' W$, on true line bet. secs. 26 and 35.

Gradually descend over rolling land sloping W., through short undergrowth of shade-scale.

0.60 Telegraph line, bears N. $11^{\circ}24' W$, and S. $11^{\circ}24' E$.

1.60 Center of the Denver and Rio Grande railroad track, bears N. $11^{\circ}24' W$ and S. $11^{\circ}24' E$.

3.80 Wagon road, from Green River, Utah to Price, Utah bears N. and S.

17.00 Enter dense greasewood undergrowth, bears N. and S.

22.60 Saleratus Creek wash, 2 chs. wide, 6 ft. deep, channel dry, drains S. Gradually ascend

39.00 Leave greasewood undergrowth, bears N. and S.

40.00 $\frac{1}{4}$ Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor. with brass cap marked

S 26

$\frac{1}{4}$ ✓

S 35

1912

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.

Subdivision of T. 20 S., R. 14 E.

Chains

72.00 Wash, 10 lbs. wide, 2 ft. deep, drains N.
 75.00 Enter hilly land, bears N. and S. 10° W,
 Ascend 30 ft. to
 80.01 The cor. of secs. 26, 27, 34 and 35.
 Land rolling and hilly, draining W. on
 E. 22 1/2 chs. and E. on W. 57.41 chs.
 Soil, clay and gravelly. 3rd. rate.
 Sub-soil, hard shale and clay.
 Undergrowth, Shadscale and greasewood
 Greasewood undergrowth on 24.00 chs.
 No timber.

N. 0° 01' W., bet. secs. 26 and 27.
 Over mountainous land near base
 of foot hills draining east, through
 short undergrowth of shadscale.
 Gradually ascend across small
 hollows and spurs.

Descend 20 ft. to

3.00 Wash in hollow, drains E.
 10.00 Wash in hollow, 25 ft. deep, drains, E.
 20.00 Wash in hollow, 30 ft. deep, drains, E.
 28.00 Wash in hollow, 25 ft. deep, drains, E.
 37.00 Wash in hollow, 25 ft. deep, drains, E.
 Ascend 35 ft. to.

40.00 Spur, projects E.
 Set an iron post, 3 ft. long, 1 in. in
 dia., 24 ins. in the ground for 1/4 sec.
 cor., with brass cap marked

S 27 | S 26 ✓
 1/4

1912 ✓

dig pits, 18 x 18 x 12 ins., N. and S. of
 post, 3 ft. dist, raise a mound of
 earth, 3 1/2 ft. base, 1 1/2 ft. high W. of cor.
 Descend 50 ft. to

48.50 Wash in hollow, drains E.
 60.00 Wash in hollow, 50 ft. deep, drains E.
 Ascend 50 ft. to

Subdivision of T. 20 S., R. 14 E.

chain

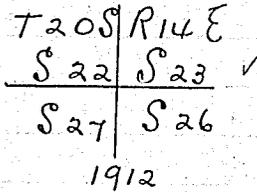
73.00 Spur, projects E.

Descend 75 ft. to

79.00 Hollow, drains S. 80° E.

Ascend.

80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 22, 23, 26 and 27. with brass cap marked



raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Land mountainous draining E.

Soil, gravelly; 3rd. rate.

Sub-soil, hard clay and shale.

No timber.

Undergrowth, short shadscale.

Good grass for grazing

Mountainous land 80.00 chs.

S. 89° 55' E., on random line bet. secs. 23 and 26

40.00 Set temporary 1/4 sec. cor.

80.01 Intersert N. and S. line of lks. N. of the cor. of secs. 23, 24, 25 and 26
Thence I run

N. 89° 52' W., on a true line bet. secs. 23 and 26.

Over rolling clay hills draining SW, through short undergrowth of shadscale.

17.00 Telegraph line, bears N. 11° 24' W., and S. 11° 24' E.

17.60 Center of the Denver and Rio Grande railroad track, bears N. 11° 24' W., and S. 11° 24' E.

18.80 Wagon road from Green River, Utah to Price, Utah, bears N. 20° W. and S. 10° E.

Subdivision of T. 20 S., R. 14 E.

Chambers

- 29.90 Wash, 10 lks. wide, 10 ft. deep,
drains SW.
- 39.00 Enter greasewood undergrowth,
bears N. and S.
- 40.00^{ch} Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in the ground for $\frac{1}{4}$
sec. cor., with brass cap marked

$$\begin{array}{r} S 23 \\ \frac{1}{4} \end{array}$$
 ✓

$$S 26$$

 1912
 dig pits, 18 x 18 x 12 ins., E. and W.
of post, 3 ft. dist., raise a mound
of earth, $3\frac{1}{4}$ ft. base, $1\frac{1}{2}$ ft. high N.
of cor.
- 50.00 Saleratus creek wash, 1.25 ch. wide,
3 ft. deep, channel dry, drains S.E.
Gradually ascend
- 65.00 Leave greasewood undergrowth,
bears N. and S.
Enter mountainous land, bears N.
and S.
Ascend
- 80.01 The cor. of secs. 22, 23, 26 and 27.
Land rolling and mountainous,
draining SW. on E. 50 chs. and E.
on W. 30.01 chs.
Soil, clay and gravelly on hard clay
and shale sub-soils, 3rd. rate.
No timber.
Undergrowth, short shadscale and
greasewood. Greasewood undergrowth
on 26 chs.
Some good grass for grazing.
Mountainous land on W. 15.01 chs.
July 15: at this sec. cor. I set off
 $21^{\circ} 31' N.$, on the decl. arc; and at
 $12^h. 05^m$ p. m. l. m. t., observe the sun
on the meridian; the resulting lat.
is $39^{\circ} 03\frac{1}{2}'$

Subdivision of T. 20 S., R. 14 E.

chains							
	N. 0° 01' W., bet. secs. 22. and 23. Over mountainous land draining E., through short undergrowth of shade-scale.						
3.60	Ascend 50 ft. to Spur, projects E.						
11.00	Descend 40 ft. to Hollow, drains E.						
20.00	Ascend 50 ft. to Spur, projects E.						
26.70	Gradually descend. Begin abrupt descent into hollow.						
29.70	Wash in hollow, 20 lks. wide, 100 ft. below spur, drains E.						
30.60	Old wagon road in hollow, bears E. and W.						
35.70	Ascend 75 ft. to Spur and N. side of hollow, bears E. and N. 70° W.						
40.00	Gradually descend. Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked						
	<table style="margin: auto;"> <tr> <td style="text-align: center;">S 22</td> <td style="border-left: 1px solid black; text-align: center;">S 23</td> </tr> <tr> <td style="text-align: center;">1/4</td> <td style="border-left: 1px solid black; text-align: center;">✓</td> </tr> <tr> <td colspan="2" style="text-align: center;">1912</td> </tr> </table>	S 22	S 23	1/4	✓	1912	
S 22	S 23						
1/4	✓						
1912							
48.00	raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor. Hollow, 50 ft. deep, drains S. 75° E.						
66.80	Ascend 50 ft. to Ridge, bears E. and W.						
78.50	Descend 100 ft. to Base of mountain and right bank of Saleratus creek wash, bears E. and W.						
80.00	Thence across channel of wash. Point for cor. of secs. 14, 15, 22 and 23 falls in center of wash, course E.						

Subdivision of T. 20 S., R. 14 E.

Chains

No cor. set. Mark temporary point for sec. cor. for future reference.
 Land, mountainous draining E.
 Soil, gravelly and some clay; 3rd. rate.
 Sub-soil, hard clay and shale; 3rd. rate.
 No timber.
 Undergrowth, short shadscale.
 Some good grass for grazing.
 Mountainous land. 80.00 chs.

- 40.00 S. $89^{\circ}52'$ E., on random line bet. secs. 14 and 23
 Set temporary $\frac{1}{4}$ sec. cor.
- 80.02 Intersect N. and S. line at the cor. of secs. 13, 14, 23 and 24
 Thence I run
 N. $89^{\circ}52'$ W., on true line bet. secs. 14 and 23.
 Gradually descend over rolling clay hills draining SW., through short undergrowth of shadscale.
- 33.00 Telegraph line bears N. $11^{\circ}20'$ W., and S. $11^{\circ}20'$ E.
- 33.60 Center of the Denver and Rio Grande railroad track, bears N. $11^{\circ}20'$ W. and S. $11^{\circ}20'$ E.
- 35.90 Wagon road from Greenriver, Utah to Price, Utah, bears N. 10° W. and S. 10° E.
- 40.01 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked
- | |
|---------------|
| S 14 |
| $\frac{1}{4}$ |
| S 23 |
| 1912 |
- dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., raise a mound of

Subdivision of T. 20 S., R. 14 E.

Channel

earth, $3\frac{1}{4}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.

52.00 Wash, 35 lbs. wide, 10 ft. deep, drains SW.

Ascend 20 ft. to

55.90 Low ridge, bears NW. and SE.

Descend 30 ft. to

58.00 Enter channel of Saleratus creek wash, course at bend from W. to S.

Thence up channel of wash.

80.00 The true cor. point of secs. 14, 15, 22 and 23.

Land hilly, draining S. and SW.

Soil, blue alkali clay and gravelly, 4th. rate.

Sub-soil; hard, dry shale.

No timber.

Undergrowth, short shadscale

July 15, 1912

July 16: At 7th 06^m. a.m. l.m. t., I set off $39^{\circ}04'$ on the lat. arc; $21^{\circ}24'$ N. on the decl. arc; and determine a meridian with the solar at the true cor. point of secs. 14, 15, 22 and 23.

Thence I run

N. $0^{\circ}01'$ W., bet. secs. 14 and 15

Across channel of Saleratus creek wash.

2.50 Left bank of wash, bears E. and W.

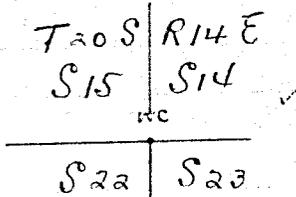
Enter rolling sandy land, gradually ascend through greasewood undergrowth.

3.50 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for witness cor. to the cor. of secs. 14, 15, 22 and 23, with brass cap

Subdivision of T. 20 S., R. 14 E.

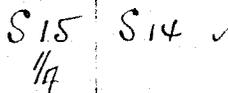
chain

marked.



1912 ✓

- dig pits, 18 x 18 x 12 ins., in each sec. 5 1/2 ft. dist., raise a mound of earth 4 ft. base, 2 ft. high W. of cor.
- 10.00 Leave greasewood undergrowth, bears E. and W.
- 20.00 Row ridge, bears NE. and SW. descend.
- 23.00 Saleratus creek wash, 2 chs. wide, 5 ft. deep, channel dry, drains SW. Thence gradually ascend through scattering greasewood undergrowth over sandy land subject to overflow.
- 39.00 Leave land subject to overflow, bears NE. and SW.
- 40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked



1912 ✓

- dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high W. of cor.
- 67.40 Saleratus Creek wash, 5 chs. wide, 3 ft. deep, channel dry, drains SE. Thence along east side of wash.
- 80.00 Set an iron post, 3 ft long, 2 ins. in dia., 24 ins. in the ground for cor of secs. 10, 11, 14 and 15 with brass cap marked

Subdivision of T. 20 S., R. 14 E.

chains

T 20 S	R 14 E
S 10	S 11 ✓
S 15	S 14

1912.

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Land, rolling

Soil, sandy and gravelly; 2nd. rate.

Sub-soil, some sand and clay.

Undergrowth greasewood and shadescale

No timber.

Good grass for grazing.

S. 89° 52' E., on random line bet. secs. 11 and 14.

40.00 Set temporary 1/4 sec. cor.

79.98 Intersect N. and S. line 2 lks. N. of the cor. of secs. 11, 12, 13 and 14.

Thence I run

N. 89° 51' W., on true line bet. secs. 11 and 14.

"Gradually descend over rolling clay hills through short undergrowth of shadescale.

15.40 Wash, 20 lks. wide, 4 ft. deep, drains SW.

39.99 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

S 11
1/4 ✓
S 14

1912.

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist.; raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high N. of cor.

48.10 Wire fence, bears N. 15° W. and S. 15° E.

Subdivision of T. 20 S., R. 14 E.

chains

49.10 Telegraph line, bears N. $14^{\circ} 40'$ W., and S. $14^{\circ} 40'$ E.

49.70 Center of the Denver and Rio Grande railroad track, bears N. $14^{\circ} 40'$ W., and S. $14^{\circ} 40'$ E.

A side track which bears east of the main line starts N. 2.50 chs.

The chimney on the Desert Station, bears N. $10^{\circ} 08'$ W.

A cistern at the station house, which holds about 10,000 gallons ^{of water}, bears N. $12^{\circ} 15'$ W.

51.20 Wire fence, bears N. 15° W. and S. 15° E.

51.60 Wagon road from Greenwin, Utah, to Price, Utah, bears N. 15° W. and S. 15° E.

68.00 Enter greasewood undergrowth, bears N. and S.

79.98 The cor. of secs. 10, 11, 14 and 15. Land, rolling with a general, SW. drain.

Soil, blue alkali clay and gravelly; 4th. rate, on hard shale sub-soil. No timber.

Undergrowth, short shadscale and greasewood. Greasewood undergrowth on W. 11.98 chs.

Some good grass for grazing on W. 25 chs.

N. $0^{\circ} 01'$ W., bet. secs. 10 and 11

Over rolling land through greasewood undergrowth.

8.00 Salerat us, creek wash. 2 chs. wide,

16.50 5 ft. deep, channel dry, course SW

39.00 Wagon road, ^{bro 5.00} same wash, 5 chs. wide, course SE.

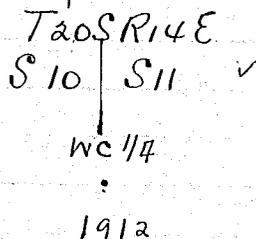
40.00 Point for $1/4$ sec. cor. falls in wash. no cor. set.

Subdivision of T. 20 S., R. 14 E.

Chaus.

41.30

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for witness cor. to the $\frac{1}{4}$ sec. cor., with brass cap marked.



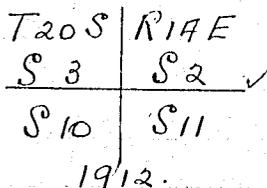
raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.

Leave greasewood undergrowth, bears NW. and SE.

Thence through short shadscale undergrowth.

80.00

Set an iron post, 3 ft. long, 2 in. in dia., 24 ins. in the ground for cor. of secs. 2, 3, 10 and 11 with brass cap marked.



dig pits, $18 \times 18 \times 12$ ins., in each sec. $5\frac{1}{2}$ ft. dist., raise a mound of earth, 4 ft. base, 2 ft. high W. of cor. Land, rolling, draining S.

Soil, clay and gravelly; 2nd. rate. Sub-soil, sand and clay.

No timber

Undergrowth, greasewood on S. 41.30 chs. and shadscale on N. 38.70 chs.

Some good grass for grazing.

July 16: At this sec. cor., I set off $21\frac{1}{2}$ 21' N., on the decl. arc; and at 12^h. 06^m. p.m. l.m.t., observe the sun on the meridian the resulting lat. is $39^{\circ} 06'$

S. $89^{\circ} 51' E$, on random line bet. secs.

Subdivision of T. 20 S., R. 14 E.

chains

2 and 11.

40.00 Set temporary $\frac{1}{4}$ sec. cor.

79.86 Intersect N. and S. line at the cor. of secs. 1, 2, 11 and 12.

Thence I run

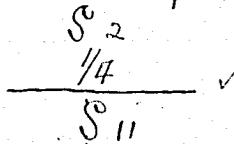
N. $89^{\circ}51'$ W., on true line bet. secs. 2 and 11.

Over rolling clay hills draining S. and W., through short undergrowth of shadscale

6.40 Wash, 10 lks. wide, 5 ft. deep, drains SW.

23.30 Wash, 5 lks. wide, 4 ft. deep, drains SW.

39.43 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked



1912.

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dia., raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.

55.75 Wash, 15 lks. wide, 5 ft. deep, drains SW.

68.75 Telegraph line, bears N. $13^{\circ}45'$ W. and S. $13^{\circ}45'$ E.

69.12 Center of the Denver and Rio Grande railroad track, bears N. $13^{\circ}45'$ W. and S. $13^{\circ}45'$ E.

The 569th. mile post, bears N. $12^{\circ}50'$ W.

71.45 Wagon road from Greenriver, Utah to Price, Utah, bears N. 14° W. and S. 14° E.

79.86 The cor. of secs. 2, 3, 10 and 11.

From this cor. the chimney on the Mesert Station house, bears $S 24^{\circ}05'$ E.

The cistern at station bears $S 24^{\circ}10'$ E. Land, rolling draining S. and SW. Soil, clay: 3rd. rate

Subdivision of T. 20 S., R. 14 E.

Chains.

Sub-soil, hard shale.
No timber.
Undergrowth, short shadscale.

N. 0° 01' W., on random line bet. secs. 2 and 3.

40.00 Set temporary 1/4 sec. cor.

80.46 Intersect N. bdy. of the tp. 25 lks. N. 89° 49' W., of the cor. of secs. 2, 3, 34 and 35 - heretofore described.

Thence I run

S. 0° 10' W., on true line bet. secs. 2 and 3.

Gradually descend over gently rolling land, through short undergrowth of shadscale.

34.45 Telegraph line, bears N. 13° 45' W., and S. 13° 45' E.,

36.45 Center of the Denver and Rio Grande railroad track, bears N. 13° 45' W., and S. 13° 45' E.

40.46 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked.

S 3 | S 2 ✓
1/4

1912

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., raise a mound of earth, 3 1/4 ft. base, 1 1/2 ft. high W. of cor.

46.50 Wagon road from Greenriver, Utah to Price, Utah, bears N. 13° W. and S 13° E.

60.45 The 569th. post on the Denver and Rio Grande railroad track, bears E.

80.46 The cor. of secs. 2, 3, 10 and 11. Level, rolling, draining S. Soil, clay; 2nd. rate.

Subdivision of T. 20 S., R. 14 E.

chain

Sub-soil, clay, rather moist.

No timber.

Undergrowth, short shadscale.

Some good grass for grazing

July 16, 1912.

July 17: At 8^h. 06^m. a.m. l.m.t., I set off 39° 02' on the lat. arc; 21° 13' N., on the decl. arc; and determine a meridian with the solar at the standard cor. of secs. 33 and 34 on the S. bdy. of the tp. heretofore described. Thence I run

N. 0° 02' W., bet. secs. 33 and 34.

Over mount airous land through short undergrowth of shadscale.

Descend 75 ft. to

5.00 Cottonwood wash, 1.50 chs. wide, 6 ft. deep, drains N.E. Old road in wash, bears ^{20° E. and W.} Thence gradually ascend through deep sand.

15.00 Leave sandy land, bears E. and W. Ascend abruptly

18.00 Top of steep ascent, thence gradually ascend over rocky land sloping nearly E.

33.00 Spur, 100 ft. above wash, projects E. Gradually descend.

40.00 Set an iron post, 3 ft. long, 1 in. dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for ^{1/4} sec. cor., with brass cap marked

S 33 | S 34
1/4 |

1912

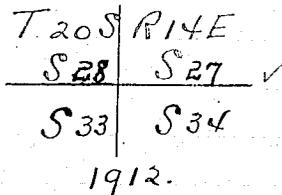
raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

Subdivision of T. 20 S., R. 14 E.

chains

- 41.00 Hollow, 40 ft. deep, drains E.
Ascend over rocky land.
- 60.40 Spur, projects E.
descend 50 ft. to
- 69.90 Hollow, drains E.
Ascend 40 ft. to
- 80.00 Spur, projects NE.
Set an iron post, 3 ft. long, 2 ins.
in dia., 24 ins. in the ground for
cor. of sees. 27, 28, 33 and 34 with
brass cap marked.



raise a mound of stone, 2 ft. base,
1 1/2 ft. high W. of cor.

Land, mountainous with a
general E. drain

Soil, rocky and sandy; 4 th. rate.
Sub-soil, rocky.

No timber

Undergrowth, short shade-scale.

Some good grass for grazing.

Mountainous land, 80.00 chs.

S. 89° 51' E, on random line bet. sees.
27 and 34.

40.00 Set temporary 1/4 sec. cor.

80.15 Intersect N. and S. line at the
cor. of sees. 26, 27, 34 and 35

Thence, I run

N. 89° 51' W., on true line bet. sees.
27 and 34.

Over mountainous land,
through short undergrowth of
shade-scale.

Ascend eastern slope of ridge.

29.40 Top of ridge, 100 ft. above sec. cor.,
bears N. and S.

Subdivision of T. 20 S., R. 14 E.

chains.

- Descend abruptly over land facing W.
- 35.20 Base of abrupt descent, bears N. and S.
- Gradually descend.
- 40.07 $\frac{1}{2}$ Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked
- $$\begin{array}{r} S\ 27 \\ \frac{1}{4} \\ \hline S\ 34 \\ 1912 \end{array}$$
- raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.
- 56.60 Wash in large hollow, 75 lks. wide, 5 ft. deep, drains S.
- Ascend.
- 59.60 Old wagon road, bears N. and S.
- 66.60 Spur, 75 ft. high, projects S.
- Descend 50 ft. to
- 70.15 Hollow, drains S.
- Ascend 50 ft. to
- 80.15 The cor. of secs. 27, 28, 33 and 34. Land, mountainous, draining E. on E. 29.35 chs., W. on next 26.75 chs., and SE. on W. 74.55 chs. General drain of country is S. Soil, gravelly, clay and rocky; 4 th. rate, on rocky and shale sub-soil. No timber. Undergrowth, short shadscale. Mountainous land 8015 chs. July 17: At this sec. cor., I set off $21^{\circ} 11'$ N., on the decl. arc; and at $12^{\text{h}} 06^{\text{m}}$ p.m. l.m.t., observe the sun on the meridian; the resulting lat. is $39^{\circ} 03'$

$N. 0^{\circ} 02' W.$, bet. secs. 27, and 28.

Subdivision of T. 20 S., R. 14 E.

chains					
	Over rocky land draining E., through short undergrowth of shade-scale.				
5.30	Descend 30 ft. to Hollow, drains NE.				
10.90	Ascend 30 ft. to Spur, projects E.				
17.20	Descend 25 ft. to Hollow, drains E.				
24.50	Ascend 30 ft. to Spur, projects E.				
29.20	Descend 40 ft. to Hollow, drains E.				
32.00	Ascend 50 ft. to Spur, projects E.				
35.00	Descend 40 ft. to Hollow, drains SE.				
40.00	Ascend				
	Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked				
	<table border="0"> <tr> <td style="border-right: 1px solid black; padding: 0 10px;">S 28 1/4</td> <td style="padding: 0 10px;">S 27 1/2</td> </tr> <tr> <td colspan="2" style="text-align: center;">1912</td> </tr> </table>	S 28 1/4	S 27 1/2	1912	
S 28 1/4	S 27 1/2				
1912					
	raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.				
50.00	Spur, 40 ft. high, projects E.				
55.00	Descend 40 ft. to Wash in hollow, 25 lbs. wide, drains SE.				
61.10	Ascend 50 ft. to Spur, projects SE.				
64.00	Descend 50 ft. to Wash in hollow, 1 ch. wide, drains SE.				
69.00	Ascend Spur, projects SE.				
74.50	Descend Wash in hollow, 1 ch. wide,				

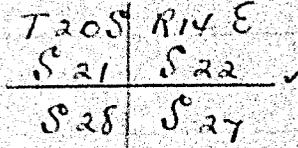
Subdivision of T. 20 S., R. 14 E.

Chains

drains SE.

Gradually ascend.

80.00 Set an iron post, 3 ft. long, 2 in. in dia., 24 ins. in the ground for cor. of secs. 21, 22, 27 and 28 with brass cap, marked.



1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

land, hilly draining E., General drain of country, south.

Soil, rocky; 4th. rate of volcanic formation.

Undergrowth, short shadscale.

No timber.

Some good grass for grazing.

Hilly land on 80.00 Cha.

S. 89° 51' E., on random line bet. secs. 22 and 27.

10.00 Set temporary 1/4 sec. cor.

80.14 Intersect N. and S. line 19 lks. S. of the cor. of secs. 22, 23, 26 and 27.

Thence 3 run

N. 89° 59' W., on true line bet. secs. 22 and 27.

over rolling mountainous land through short undergrowth of shadscale. Ascend eastern slope of ridge.

20.20 Top of ridge, 75 ft. above sec. cor., bears N. and S.

Ascend 50 ft. to

37.00 Wash, 10 lks. wide, 3 ft. deep, drains S.

Thence over nearly level brush land sloping SW.

10.07 Set an iron post, 3 ft. long, 1 in. in

Subdivision of T. 20 S., R. 14 E.

chauss

dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

$$\begin{array}{r} S 22 \\ \frac{1}{4} \\ \hline S 27 \\ 1912 \end{array}$$

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, N. of cor.

40.60 Wash, 10 lks. wide, 2 ft. deep, drains S.

52.00 Wash, 10 lks. wide, 4 ft. deep, drains S.

61.00 Old wagon road, bears N. and S.

70.80 Leave bench, bears N. and S. Descend into hollow.

76.20 Wash in hollow, 1 ch. wide, 5 ft. deep, drains S.

Ascend 30 ft. to

80.14 the cor. of sees. 21, 22, 27, and 28.

Land, mountainous and rolling. E. 39.00 chs. mountainous land draining E., soil, gravelly on hard shale sub-soil, very poor. Undergrowth, short shadscale. Next 33.80 chs. rolling bench, draining SW. Soil, gravelly on rich sandy loam and gravel sub-soil, very dry. Good grass for grazing, and some shadscale undergrowth. W. 9.34 chs. mountainous land. soil, rocky on rocky sub-soil, very poor. Undergrowth short shadscale. No timber.

Mountainous land 46.34 chs.

N. 0° 02' W., bet. sees. 21 and 22.

Over rolling mountainous land, through short undergrowth of shadscale.

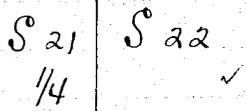
6.00 Enter hollow, bears NW. and SE.

Subdivision of T. 20 S., R. 14 E.

BOOK A 355

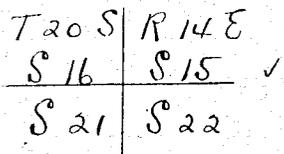
Chaus.

- 11.50 Wash in hollow, 60 lks. wide, 5 ft. deep, drains SE.
- 20.00 Same wash, drains SW.
- 25.40 Leave hollow, bears NE. and SW. Ascend 30 ft. to
- 30.00 Spur, projects E. Descend
- 32.00 Wash in hollow, 20 lks. wide, drains SE. Ascend.
- 40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked



1912

- 55.00 raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor. Spur, 50 ft. high, projects E. Descend 40 ft. to
- 61.00 Wash in hollow, 25 lks. wide, drains SE. Ascend 30 ft. to
- 65.00 Spur, projects E. Descend.
- 70.00 Wash in large hollow, 50 lks. wide, 3 ft. deep, drains SE. Thence along east side of wash.
- 80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 15, 16, 21 and 22 with brass cap marked



1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.

Subdivision of T. 20 S., R. 14 E.

chains.

Land mountainous with a general S.E. drain.
Soil, rocky of volcanic formation; 4th rate.
Sub-soil, rocky and hard clay.
No timber.
Undergrowth, short shadscale.
Some good grass for grazing.
Mountainous land, 80.00 chs.

S. 89° 59' E., on random line bet. sees. 15 and 22.

40.00

Set temporary 1/4 sec. cor.

80.15

Intersect N. and S. line 3 lks. S. of the true cor. point of sees. 14, 15, 22 and 23.

Thence I run

West, on true line bet. sees. 15 and 22.

Gradually ascend up channel of Salerat us Creek wash, 4 chs. wide.

18.75

Leave channel of wash; turn NE. Enter mountainous land.

28.65

Ascend abruptly 125 ft. to top of clay ridge, bears N. and S. Descend 50 ft. to

33.55

Hollow, drains S.

Ascend over rocky land.

40.07 1/4

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

S 15

1/4

S 22

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high N. of cor.

44.00

Low ridge, bears N. and S. Leave mountainous land.

Subdivision of T. 20 S., R. 14 E.

chains.

Thence gradually descend over
 gently rolling gravelly bench.
 52.35 ^{old wagon road, 6 ft. or 7.5.}
 69.45 Wash, 15 lks. wide, 6 ft. deep,
 drains S.
 80.15 The cor. of secs. 15, 16, 21 and 22.
 Land, level, mountainous and
 gently rolling
 E. 18.75 chs., level channel of wash.
 Soil, rocky on rocky sub-soil; 4 th. rate
 Next 25.25 chs. mountainous land.
 Soil, clay and rocky on rock and
 hard shale sub-soil; 4 th. rate.
 No Undergrowth. W. 36.15 chs.
 gently rolling bench. Soil, gravelly
 surface with gravel and sand
 sub-soil, very dry. Undergrowth,
 short shade-scale, good grass for
 grazing.
 No timber.
 Mountainous land 25.25 chs.
 July 17, 1912.

July 18: At 8^h. 06^m. a.m. l.m.t., I
 set off $39^{\circ} 04'$ on the lat. arc; $21^{\circ} 03'$
 N. on the decl. arc; and determine
 a meridian with the solar at the
 cor. of secs. 15, 16, 21 and 22.

Thence I run

N. $0^{\circ} 02'$ W., bet. secs. 15 and 16.

Gradually ascend over gently
 rolling bench land through short
 undergrowth of shade-scale.

40.00 Set an iron post, 3 ft. long, 1 in. in
 dia., 24 ins. in the ground for $\frac{1}{4}$
 sec. cor. with brass cap marked

S 16 | S 15
 $\frac{1}{4}$

1912.

dig pits, 18 x 18 x 12 ins., N. and S.

A-399
Subdivision of T. 20 S., R. 14 E.

chains

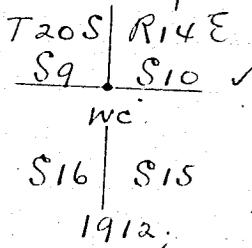
of post, 3 ft. dist, raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high W. of cor.

61.00 Leave bench, bears E. and W. and old wagon road, bears NW. and SE.

Descend into hollow.

78.50 Point for cor. of secs. 9, 10, 15 and 16 will fall in channel of Saleratus Creek wash where cor. cannot be set, therefore

Set an iron post, 3 ft. long, 2 ins. in dia, 24 ins. in the ground for witness cor. to secs. 9, 10, 15 and 16, with brass cap marked.



dig pits, 18 x 18 x 12 ins., in each sec., 5 1/2 ft. dist, raise a mound of earth 4 ft. base, 2 ft. high W. of cor.

80.00 Point for cor. of secs. 9, 10, 15 and 16 falls in channel of Saleratus Creek wash. Mark temporary point for future reference.

Rand. rolling, draining S. on S. 61.00 chs., and NE. on N. 19 chs.

Soil, gravelly and sandy; 3rd. rate
Sub-soil, gravel and hard dry sand.

No timber

Undergrowth, short shade-scale.

Good grass for grazing.

East, on random line bet. secs. 10 and 15.

110.00 Set temporary 1/4 sec. cor.

80.13 Intersect N. and S. line 5 lks. S.

Subdivision of T. 20 S., R. 14 E.

Chains

of the cor. of secs. 10, 11, 14 and 15
Thence I run
S. 89° 58' W., on true line bet. secs. 10
and 15.

Over nearly level land.

7.60 Salerat us creek wash, 3 chs. wide,
5 ft. deep, drains SE.

Leave level land, enter mountain-
ous land, bears N. and S.

Ascend 100 ft. to

21.60 Ridge, bears N. and S.

Descend abruptly 85 ft. to

24.10 Enter hollow, drains SE.

40.06^{1/2} On south side of hollow.

Set an iron post, 3 ft. long, 1 in. in
dia., 2 1/2 ins. in the ground for 1/4
sec. cor., with brass cap marked

S 10

1/4

S 15

1912

dig pits, 18 x 18 x 12 ins., E. and W.
of post, 3 ft. dist., raise a mound
of earth, 3 1/2 ft. base, 1 1/2 ft. high N.
of cor.

50.00 Same hollow, drains N. 80° E.

Ascend.

61.00 Old wagon road, bears N. and S.

63.40 Top of ascent, bears N. and S.

Descend 75 ft. over land facing W. to

71.00 Right bank of Salerat us creek
wash, bears N. and S. 85° W.

Thence in channel of wash.

80.13 The true cor. point of secs. 9, 10,
15 and 16.

Land, mountainous and level.

E. 7.60 chs. level land. W. 72.43 chs.

mountainous land. General drain
of country to the east and S.

Soil, clay, gravelly and rocky; 4th

Subdivision of T. 20 S., R. 14 E.

chains

rate.

Sub-soil, hard shale rocks.

No timber.

Undergrowth, short shadescale.

N. 0° 02' W, bet. secs. 9 and 10

5.00 In channel of Saleratus creek wash.
Left bank of wash, bears NE. and W.

37.00 Thence over nearly level land subject to overflow, through undergrowth of greasewood.
Leave land subject to overflow and greasewood undergrowth, bears NE. and SW.

40.00 Ascend.
Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S 9 | S 10
1/4

1912.

41.00 raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Low spur, projects S. 80° E.
Descend.

46.00 Hollow, drains S. 80° E.

59.00 Ascend.
Low spur, projects SE.

62.30 Descend.
Enter large hollow, bears NW. and SE.

75.00 Enter greasewood undergrowth, bears NW. and SE.

80.00 Set an iron post, 3 ft. long, 2 in. in dia.; 24 ins. in the ground for cor. of secs. 3, 4, 9 and 10 with brass cap marked.

Subdivision of T. 20 S., R. 14 E.

Chand.

T 20 S	R 14 E
S 4	S 3 ✓
S 9	S 10

1912.

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Land, rolling, draining E.

Soil, sandy and gravelly; 2nd. rate.

Sub-soil, hard gravel.

No timber.

Undergrowth, greasewood and shadescale. Greasewood undergrowth on 42. chs.

Some good grass for grazing

N. 89° 58' E., on random line bet. secs. 3 and 10.

40.00 Set temporary 1/4 sec. cor.

50.15 Int. erect N. and S. line 5 lks. N. of the cor. of secs. 2, 3, 10 and 11.

Thence S run

West, on true line bet. secs. 3 and 10. Over nearly level land, through short undergrowth of shadescale.

15.45 Wash, 15 lks. wide, 7 ft. deep, drains SE.

21.00 Leave level land, enter mountainous land, bears N. and S. Ascend 100 ft. to

39.00 Top of ridge, bears N. and S. Ascend

40.75 Set an iron post, 3 ft. long, 1 in. in dia., 20 in. in the ground for 1/4 sec. cor., with brass cap marked

S 3
1/4
S 10

1912

raise a mound of stone, 2 ft. base,

Subdivision of T. 20 S., R. 14 E.

chains	
	1 1/2 ft. high N. of cor.
45.70	Hollow, 60 ft. deep, drains S. Ascend 50 ft. to
51.90	Rocky spur, projects S. Descend 35 ft. to
54.30	Hollow, drains S. Ascend 40 ft. to
56.80	Low spur, projects S. Descend.
66.10	Wash, 1 ch. wide, 3 ft. deep, drains S.E. Leave mountainous land, enter nearly level land and greasewood undergrowth, bears N. 20° W. and S. 20° E.
80.15	The cor. of secs. 3, 4, 9 and 10. Land, mountainous and level. E. 21 chs. level land. Soil, clay on clay sub-soil; 2nd. rate. Next 45. 10 chs. mountainous land, soil, gravelly on hard shale sub-soil, very poor. W. 14.05 chs. level land Soil, gravelly and rocky on hard gravel sub-soil; 3rd. rate. Under- growth greasewood. Shadscale undergrowth on E. 66.10 ch. No timber Some good grass for grazing. General drain of land to the south. Mountainous land 45.10 chs. July 18: At this sec. cor., I set off 21° 01' N., on the decl. arc; and at 12 ^h . 06 ^m . p.m. l.m.t., observe the sun on the meridian; the resulting lat. is 39° 06'
	N. 0° 02' W., on random line bet. secs. 3 and 4
40.00	Set temporary 1/4 sec. cor.
80.72	Intersect N. bdy. of the tp. 42 th to N. 89° 49' W.

Subdivision of T. 20 S., R. 14 E.

chains

of the cor. of secs. 3, 4, 33 and 34
heretofore described

Thence I run

S. 0° 16' W., on true line bet. secs. 3
and 4.

Over hilly land, through short
undergrowth of shade-scale

Ascend 50 ft. to

10.70 Spur, projects W.

Descend 50 ft. to

20.70 Hollow, drains W.

Ascend 75 ft. to

38.30 Top of ridge, bears NW. and SE.

Descend abruptly over bluff 40 ft. to

40.72 Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins in the ground, for 1/4
sec. cor., with brass cap marked

S 4 | S 3 ✓
1/4

1912

raise a mound of stone, 2 ft. base,
1 1/2 ft. high W. of cor.

Descend

43.20 Base of ridge, 40 ft. below 1/4 sec.
cor. bears NW. and SE.

Thence over nearly level land.

69.70 Wash, 1 ch. wide, 3 ft. deep,
drains SE.

Enter greasewood undergrowth,
bears NW. and SE.

80.72 The cor. of secs. 3, 4, 9 and 10.

Land, hilly and level with a
general S. drain. N. 43.70 chs.

hilly land. S 37.5 ✓ chs. level land.

Soil, clay and gravelly; 3rd. rate.

Sub-soil, hard shale and gravel.

Undergrowth, shade-scale and

greasewood. Greasewood undergrowth
on S. 11.0 ✓ chs.

Subdivision of T. 20 S., R. 14 E.

chains

No timber.
Some good grass for grazing.
July 18, 1912

July 19: At 8^h. 06^m. a.m. l.m.t., I set off 34° 02' on the lat. arc; 20° 52' N. on the decl. arc; and determine a meridian with the solar at the standard cor. of secs. 32 and 33 on the S. bdy. of the tp. heretofore described.

Thence I run N. 0° 03' W., bet. secs. 32 and 33.

Over mountainous land, through short undergrowth of shadescale.

Ascend

1.60 Low ridge, bears E. and W.

Descend.

6.20 Old wagon road, bears NW. and SE.

11.40 Cottonwood Wash, in hollow, 80 lks. wide, some alkali water, 85 ft. below ridge, drains E.

Ascend 50 ft. to

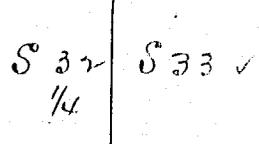
14.00 Spur, projects W.

Descend 40 ft. to

26.00 Wash in hollow, 25 lks. wide, 5 ft. deep, drains SW.

Thence gradually ascend over solid sandstone bed rock.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked



1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

46.50 Leave solid sandstone bed rock, begin abrupt ascent overland facing

Subdivision of T. 20 S., R. 14 E.

chains

- nearly S.
 60.00 Spur, 100 ft. high, projects E.
 Note: A Rocky peak bears W. 2 chs.
 thence 100 ft. to
 70.00 Wash in hollow, 30 lks. wide,
 drains SE.
 Ascend 65 ft. to
 77.50 Spur, projects SE,
 thence over land sloping E.
 80.00 Set an iron post, 3 ft. long, 2 ins.
 in dia., 24 ins. in a mound of
 stone and earth, 4 ft. base, 2 ft.
 high for cor. of secs. 28, 29, 32
 and 33, with brass cap marked

T20S	R14E
S29	S28
S32	S33
1912	

raise a mound of stone, 2 ft. base,
 1 1/2 ft. high W. of cor.

Note: On account of natural
 obstacles, I am unable to set post in
 the ground.

Land, mountainous with a
 general E. drain.

Soil, rocky on rocky sub-soil; 4 th.
 rate.

No timber.

Undergrowth, short shade-scale.

Mountainous land, 80.00 chs.

- S. 89° 48' E., on random line bet.
 secs. 28 and 33.
 40.00 Set temporary 1/4 sec. cor.
 79.96 Intersect N. and S. line, 5 lks. S.
 of the cor. of secs. 27, 28, 33 and 34.
 Thence I run
 N. 89° 50' W., on true line bet. secs.
 28 and 33.
 Over mountainous land through

Subdivision of T. 20 S., R. 14 E.

chains	short undergrowth of shadscale. descend
5.50	Hollow, 50 ft. deep, drains NE. Ascend 50 ft. to
14.00	Spur, projects NE. descend 30 ft. to
18.50	Hollow, drains NE. thence ascend over rocky land facing E.
39.98	Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked S 28 <u> 14</u> S 33 1917
45.50	raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor. Ridge, bears N. and S. descend abruptly 90 ft. to
52.00	Base of descent and hollow, drains S. gradually ascend
73.50	Spur, projects S. descend 30 ft. to
76.00	Hollow, drains SE. ascend.
79.96	The cor. of secs. 28, 29, 32 and 33. Land mountainous, draining NE. on E. 45.50 chs., and S. on W. 34.46 chs. Soil, rocky on rocky sub-soil; 4 ths. rate. No timber. Undergrowth, short shadscale. Some good grass for grazing on E. 45.50 chs. Mountainous land 79.96 chs.

N. 0° 03' W., bet. secs. 28 and 29.

Subdivision of T. 20 S., R. 14 E.

chauc

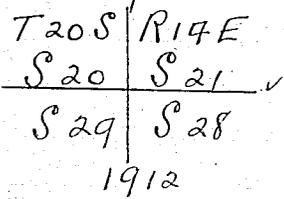
- Over mountainous land, through short undergrowth of shade-
 9.60 descend abruptly 100 ft. to
 Hollow, drains NE.
 Thence ascend over rocky land
 facing S., 300 ft. to
 30.60 Top of high rocky ridge, bears E.
 and W.
 Descend abruptly 275 ft. to
 40.00 Set an iron post, 3 ft. long, 1 in. in
 dia., 2 1/2 ins. in a mound of stone
 and earth, 4 ft. base, 2 ft. high,
 for 1/4 sec. cor., with brass cap
 marked.
- | | | |
|------|--|--------|
| S 29 | \| | S 28 ✓ |
| 1/4 | \| |  |
- 1912.
- raise a mound of stone, 2 ft. base,
 1 1/2 ft. high, W. of cor.
 Note: On account of natural obstacles,
 I am unable to set post in the
 ground.
- 40.50 Wash in hollow, 25 lks. wide,
 drains NE.
 Ascend 30 ft. to
 47.00 Low spur, projects E.
 Descend 30 ft. to
 49.00 Wash in hollow, 30 lks. wide,
 drains E.
 Ascend abruptly 250 ft. to
 60.00 Top of steep ascent, bears E. and
 W.
 Gradually ascend
 70.00 Top of high ridge, bears E. and
 W.
 Descend abruptly 175 ft. to
 78.80 Wash in canyon, 30 lks. wide,
 drains NE.

Subdivision of T. 20 S., R. 14 E.

chains.

80.00

Ascend.
Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 20, 21, 28 and 29, with brass cap marked



raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

Land, mountainous, with a general N.E. drain.

Soil, rocky, of volcanic formation, 4th. rate.

No timber.

Undergrowth, short shadscale.

Some good grass for grazing.

Mountainous land 80.00 chs.

July 19: The sky is overcast at noon, observations for lat. impossible. At 1 P. M. heavy storm of rain prevents field work for the rest of day.

July 19, 1912

July 20: At 8^h. 06^m. a.m. l.m.t., I set off 39° 03' on the lat. arc; 20° 41' N., on the decl. arc; and determine a meridian with the solar at the cor. of secs. 20, 21, 28 and 29.

Thence I run S. 89° 50' E., on random line bet. secs. 21 and 28.

40.00

Set temporary 1/4 sec. cor.

Subdivision of T. 20 S., R. 14 E.

- chains
- 80.04 Intersect N. and S. line 12 lks. S. of the cor. of secs. 21, 22, 27 and 28.
 Thence, I run N. 89° 55' W., on true line bet. secs. 21 and 28.
 Over mountainous land, through short undergrowth of shade-scale.
 Descend 30 ft. to
- 13.60 Wash in hollow, 50 lks. wide, drains SE.
 Ascend 50 ft. to
- 25.00 Spur, projects SE.
 Descend 50 ft. to
- 27.00 Canyon wash, 1 ch. wide, in hollow, drains SE.
 Ascend 100 ft. to
- 40.02 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for 1/4 sec. cor., with brass cap marked
- | |
|------|
| S 21 |
| 14 |
| S 28 |
- 1912
- raise a mound of stone, 2 ft. base, 1 1/4 ft. high N. of cor.
 Note: on account of natural obstacles, I am unable to set post in the ground.
- 48.00 Ridge, bears N. 85° E. and S. 60° W.
 Descend abruptly 80 ft. to
- 50.00 Wash in canyon, 1 ch. wide, drains NE.
 Thence up canyon wash.
- 55.00 Leave Canyon wash, thence along S. side of canyon.
- 76.80 Same canyon wash, drains NE.
 Ascend.
- 80.04 The cor. of secs. 20, 21, 28 and 29.
 Land, mountainous

Subdivision of T. 20 S., R. 14 E.

chains

Soil, rocky of volcanic formation;
4th. rate.

Sub-soil, rocky.

No timber.

Undergrowth short shade-scale.

Mountainous land, 80.00 chs.

N. 0° 03' W., bet. sec. 20 and 21.

Over mountainous land through
short undergrowth of shade-scale.

Ascend abruptly over rocky land
facing S.

11.60 Top of ridge, 210 ft. above sec. cor.
bears NW. and E.

Thence gradually descend over
gentle NE. slope.

35.00 Enter a few scattering scrub cedar,
bears E. and W.

40.00 In hollow drains E.

Set an iron post, 3' ft. long, 1 in. in
dia., 24 ins. in a mound of stone
and earth, 4 ft. base, 2 ft. high
for $\frac{1}{4}$ sec. cor., with brass cap
marked

S 20	S 21
$\frac{1}{4}$	

1912.

raise a mound of stone, 2 ft. base,
 $1\frac{1}{4}$ ft. high W. of cor.

Note: On account of natural
obstacles, I am unable to set post in
the ground.

44.60 Ascend 50 ft. to
Spur, projects E.

49.60 Descend 60 ft. to
Wash in hollow, 25 lbs. wide,
drains E.

56.00 Ascend 65 ft. to
Spur, projects E.

Subdivision of T. 20 S., R. 14 E.

Chains

- Ascend 80 ft. to
 70.60 Wash in hollow, 25 lbs. wide,
 drains E.
 Ascend abruptly 100 ft. to
 79.20 Top of steep ascent, bears E. and
 W.
 Gradually ascend.
 80.00 Set an iron post, 3 ft. long, 2 ins. in
 dia, 24 ins. in a mound of stone
 and earth, 4 ft. base, 2 ft. high for
 cor. of secs. 16, 17, 20 and 21, with
 brass cap marked

T 20 S	R 14 E
S 17	S 16
S 20	S 21

1912

raise a mound of stone, 2 ft. base,
 1 1/2 ft. high W. of cor.
 Note: On account of natural obstacles
 I am unable to set post in the
 ground.

Land, mountainous with a
 general E. drain.

Soil, rocky, of volcanic formation,
 4th rate.

Sub-soil, rocky.

Timber, a few scattering cedar
 on N. 45.00 chs.

Mudergrowth, short shadscale.

Some good grass for grazing.

Land, mountainous or heavily
 timbered 80.00 chs.

July 20: At this sec. cor., I set
 off 20° 39' N., on the decl. arc; and
 at 12^h. 06^m. p.m. l.m.t., observe the
 sun on the meridian; the resulting
 lat. is 39° 04'.

S. 89° 55' E., on random line bet.
 secs. 16 and 21.

Subdivision of T. 20 S., R. 14 E.

chains	
40.00	Set temporary 1/4 sec. cor.
80.04	Intersect N. and S. line 3 lks. S. of the cor. of secs. 15, 16, 21 and 22
	Thence I run N. 89° 56' W., on true line bet. secs. 16 and 21.
	Over mountainous land, through short undergrowth of shade-scale.
1.50	Wash in hollow, 50 lks. wide, 3 ft. deep, drains SE.
	Gradually ascend
21.00	Low spur, projects SE.
	Gradually descend.
34.00	Wash, 20 lks. wide, 3 ft. deep, drains SE.
	Ascend
40.02	Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked
	S 16'
	1/4
	<hr style="width: 50%; margin: auto;"/>
	S 21'
	1912
	raise a mound of stone, 2 ft. base, 1 1/2 ft. high N. of cor.
51.90	Low ridge, bears N. and S.
	Descend 40 ft. to
53.30	Hollow, drains S.
	Ascend 30 ft. to
57.80	Spur, projects S.
	Descend 20 ft. to
59.80	Wash in hollow, 20 lks. wide, 10 ft. deep, drains SE.
	Enter scattering cedar, bears NW. and SE.
	Gradually ascend 70 ft. to
80.04	The cor. of secs. 16, 17, 20 and 21.
	Land, mountainous draining SE.
	Soil, rocky on rocky sub-soil, 4 th rate.

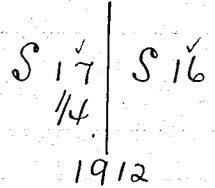
Subdivision of T. 20 S., R. 14 E.

chains

Timber, scrub cedar on W. 20.24 chs.
 Undergrowth, short shadscale.
 Land mountainous or heavily timbered 80.00 chs.

N. 0° 03' W., bet. secs. 16 and 17.
 Over mountainous land draining E., through scattering scrub cedar timber and undergrowth of short shadscale.

- 3.00 Ascend 50 ft. to Ridge, bears E. and W.
- 10.40 Descend 60 ft. to Wash in hollow, 20 lks. wide, drains E.
- 15.00 Ascend 30 ft. to Low ridge, bears E. and W.
- 21.00 Descend gradually Wash, 20 lks. wide, 8 ft. deep, drains E.
- 23.00 Ascend Spur, projects E.
- 32.00 Descend. Wash in hollow, 1 ch. wide, drains NE.
- 40.00 Thence over rocky land facing E. Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high, for 1/4 sec. cor., with brass cap marked



raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.
 Note: On account of natural obstacles, I am unable to set post in the ground.

Subdivision of T. 20 S., R. 14 E.

- chains.
- 44.50 Rocky hollow, 25 ft. deep, drains E.
Ascend
- 48.00 Spur, projects E.
Descend 50 ft. to
- 53.00 Wash in hollow, 20 lks. wide, 3 ft. deep, drains E.
Ascend 40 ft. to
- 60.00 Spur, projects E.
Descend
- 65.00 Hollow, 30 ft. deep, drains SE.
Ascend 30 ft. to
- 71.80 Spur, projects E.
Descend 40 ft. to
- 79.00 Wash in hollow, 25 lks. wide, drains NE.
Ascend
- 80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 2 1/2 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high, for cor. of secs. 8, 9, 16 and 17, with brass cap marked

T 20 S	R 14 E
S 8'	S 9'
S 17'	S 16'

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Notes: On account of natural obstacles, I am unable to set post in the ground

Land, mountainous.

Soil, rocky; 4 th. rate.

Sub-soil, rocks.

Timber, scrub cedar.

Undergrowth, short shadeless.

Land, mountainous, or heavily

timbered 80.00 chs.

July 20, 1912

Subdivision of T. 20 S., R. 14 E.

Enclosure

July 22: At 8^{h.} 36^{m.} a.m. l.m.t., I set off 39° 05' on the lat. arc, 20° 17' N., on the decl. arc; and determine a meridian with the solar at the cor. of secs. 8, 9, 16 and 17.

Thence I run S. 89° 56' E., on random line bet. secs. 9 and 16.

40.00 Set temporary 1/4 sec. cor.

80.66 Intersect N. and S. line 7 lks. N. of the true cor. point of secs. 9, 10, 15 and 16.

Thence I run N. 89° 53' W., on true line bet. secs. 9 and 16.

8.00 Up channel of Saleratus creek Wash. Leave channel of wash bears NW. and S. 85° E.

Enter sandy land and dense greasewood undergrowth.

20.50 Old wagon road, bears N. and SE. Leave sandy land and greasewood undergrowth, enter mountainous land.

Ascend 35 ft. to

25.50 Spur, projects N.

Descend 30 ft. to

30.00 Hollow, drains NE.

Ascend 40 ft. to

35.00 Enter top of ridge, bears NE. and W.

40.03 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked.

S 9'

1/4

S 16'

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high N. of cor.

46.00 Leave ridge, bears E. and S. 65° W.

Subdivision of T. 20 S., R. 14 E.

chains

- Descend abruptly 60 ft. to
 50.00 Hollow, drains NE.
 Ascend 70 ft. to
 58.80 Spur, projects S.
 Enter scattering scrub cedar timber.
 Descend 35 ft. to
 65.00 Same hollow, drains S.
 Ascend 40 ft. to
 71.90 Ridge, bears N. and SE.
 Descend 50 ft. to
 73.50 Enter wash in hollow, drains SE
 79.00 Leave wash, turns SW.
 Ascend.
 80.06 The cor. of secs. 8, 9, 16 and 17.
 Land, mountainous and level
 with a general E. drain.
 E. 20.50 chs. level land of which E. 8
 chs. is bottom of wash, remaining
 part is level bottom land covered with
 dense greasewood undergrowth. Soil,
 rich sandy loam on deep sand sub-
 soil, rather moist; 1st. rate. W. 59.56 chs.
 mountainous land covered with
 short shade-scale undergrowth and
 a few scrub cedar trees on 21.56 chs.
 Soil, rocky on rocky sub-soil of
 volcanic formation; 4th. rate.
 Mountainous land 59.56 chs.

- N. 0° 03' W., bet. secs. 8 and 9.
 Over mountainous land, through
 short undergrowth of shade-scale.
 Ascend 25 ft. to
 5.00 Ridge, bears E. and W.
 Descend 30 ft. to
 11.00 Hollow, drains NE.
 Ascend 40 ft. to
 15.80 Ridge, bears N. 80° W., and E.
 Descend abruptly, 125 ft. over land
 facing N. to

Subdivision of T. 20 S., R. 14 E.

chains.

39.00 Salerat us creek wash, in hollow, 1 ch. wide, 5 ft. deep, drains E. 10 ch. thence S. An alkali seep down wash about 10 chs.

Old wagon road in wash, bears E. and W.

Gradually ascend

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S 8'		S 9'
$\frac{1}{4}$		

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.

55.00 Top of ridge, 80 ft. above wash, bears E. and W.

Descend 50 ft. to

60.00 Wash in hollow, 60 lks. wide, drains S. 80° E.

Ascend 20 ft. to

65.00 Low spur, projects W.

Descend 15 ft. to

69.00 Same wash in hollow, drains SW. Ascend 40 ft. to

75.50 Spur, projects E.

Descend.

80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 4, 5, 8 and 9, with brass cap marked.

T 20 S		R 14 E
S 5'		S 4'
S 8'		S 9'

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.

Note: on account of natural obstacles

Subdivision of T. 20 S., R. 14 E.

chains.

I am unable to set post in the ground.

Land, mountainous, draining N.E. on S. 39.00 chs. and S. on N. 41.00 chs.

Soil, rocky of volcanic formation; 4th. rate.

Sub-soil, rocky.

No timber.

Undergrowth, short shadscale.

Mountainous land 80.00 chs.

S. 89° 53' E., on random line bet. secs. 4 and 9.

40.00 Set temporary 1/4 sec. cor.

80.06 Intersect N. and S. line 7 lks. N. of the cor. of secs. 3, 4, 9 and 10

Thence I run

N. 89° 50' W., on true line, bet. secs. 4 and 9.

Over rolling land, through short undergrowth of greasewood.

19.00 Leave rolling land and greasewood undergrowth, enter mountainous land and short shadscale undergrowth. Ascend.

27.00 Top of east side of flat ridge, 100 ft. above sec. cor. bears N. and S.

Thence across ridge

34.00 West side of ridge, bears N. and S. Descend

40.03 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

S 4'

1/4

S 9'

1912

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., raise a mound of

Subdivision of T. 20 S., R. 14 E.

chains

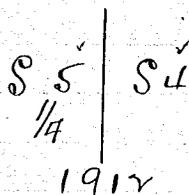
- 45.00 earth. $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.
Hollow, 50 ft. deep, drains N.
Ascend 30 ft. to
- 50.00 Low spur, projects N.
Descend 30 ft. to
- 55.00 Hollow, drains N.E.
Ascend 50 ft. to
- 63.00 Flat top ridge, bears N. and S.
Descend 60 ft. to
- 77.00 Wash in hollow, 1 ch. wide, drains S.
Ascend.
- 80.06 The cor. of secs. 4, 5, 8 and 9.
Land mountainous and rolling,
draining S.E. on E. 19 chs. and N. on
W. 61.06 chs.
Soil, gravelly and rocky of volcanic
formation; 4 th. rate. Sub soil,
clay and rocky.
No timber.
Undergrowth, short shadscale and
greasewood. Greasewood undergrowth
on E. 19 chs.
Mountainous land on W. 61.06 chs.
July 22: At this sec. cor. I set off
 $20^{\circ} 15'$ N., on the decl. arc; and at
 $12^{\text{h}} 06^{\text{m}}$ p.m. l.m.t., observe the sun
on the meridian; the resulting lat.
is $39^{\circ} 06'$.

- 40.00 N. $0^{\circ} 03'$ W., on random line bet. secs.
4 and 5.
Set temporary $\frac{1}{4}$ sec. cor.
- 80.70 Intersect N. bdy. of the tp. 43 lks.
N. $89^{\circ} 49'$ W. of the cor. of secs. 4, 5,
32 and 33, heretofore described.
Thence I run
S. $0^{\circ} 15'$ W., on true line bet. secs.
4 and 5.
Over broken mountainous land.

Subdivision of T. 20 S., R. 14 E.

Chains

- draining E., through short undergrowth of shade-scale.
 Descend 50 ft. to
 4.70 Hollow, drains E.
 Ascend 50 ft. to
 7.70 Spur, projects E.
 Descend 50 ft. to
 19.70 Wash in hollow, 30 lks. wide, drains E.
 Ascend 30 ft. to
 24.70 Spur, projects E.
 Descend 30 ft. to
 31.20 Wash in hollow, 25 lks. wide, drains E.
 Ascend.
 40.70 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked



- raise a mound of stone, 2 ft. base 1 1/2 ft. high W. of cor.
 59.70 Ridge, 100 ft. above hollow, bears NW. and SE.
 Thence descend over land facing S.
 73.70 Wash in hollow, 50 lks. wide, drains SE.
 Ascend
 80.70 The cor. of secs. 4, 5, 8 and 9.
 Land, mountainous, draining E. on N. 59.70 chs. and S. on S. 21.00 chs.
 Soil, gravelly and rocky; 3rd rate.
 Sub-soil, clay and rocky.
 No timber.
 Undergrowth, short shade-scale.
 Mountainous land 80.70 chs.

July 22, 1912

Subdivision of T. 20 S., R. 14 E.

chain.

July 23: At 8^{h.} 36^{m.} a.m. l.m.t., I set off $39^{\circ} 02'$ on the lat. arc; $20^{\circ} 05''$ N. on the decl. arc; and determine a meridian with the solar at the standard cor. of secs. 31 and 32 on the S. bdy of the tp. heretofore described.

Thence I run

$N. 0^{\circ} 03' W.$, bet. secs. 31 and 32.

Over mountainous land through short undergrowth of shadeless.

14.00 Wash in hollow, 20 lks. wide, 10 ft. deep, drains W.

Begin steep rocky ascent over land facing SW.

30.25 Rocky ridge, 200 ft. above sec. cor. bears NW. and SE.

Descend 30 ft. to

35.00 Hollow, drains E.

Ascend 25 ft. to

40.00 Spur, projects E.

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked

S 31	|	S 32
$\frac{1}{4}$	|	

1912.

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

Gradually descend.

54.70 Descend abruptly 100 ft. to

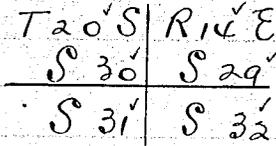
65.00 Wash in hollow, 25 lks. wide, drains E.

Ascend 80 ft. to

Subdivision of T. 20 S., R. 14 E.

chains.

76.00 Rocky spur, projects NE.
 Descend over ledges 80 ft. to
 80.00 Set an iron post, 3 ft. long, 2 ins.
 in dia., 24 ins. in the ground for
 cor. of secs. 29, 30, 31 and 32 with
 brass cap marked



1912

raise a mound of stone, 2 ft. base,
 1 1/2 ft. high W. of cor.

Land, mountainous draining
 SW. on S. 30.75 chs. and E. on N.
 49.75 chs.

Soil, rocky; 4th rate.

Sub-soil; rocky.

No timber.

Undergrowth, short shadscale.

Mountainous land, 80.00 chs.

S. 89° 50' E., on random line bet.
 secs. 29 and 32.

40.00 Set temporary 1/4 sec. cor.

80.34 Intersect N. and S. line at the cor.
 of secs. 28, 29, 32 and 33.

Thence I run

N. 89° 50' W., on true line bet. secs. 29
 and 32.

Over mountainous land drain-
 ing NE., through short undergrowth
 of shadscale.

2.00 Rocky spur, projects NE. and SW.
 Descend 60 ft. to

9.50 Hollow, draining NE.
 Ascend 50 ft. to

19.00 Rocky spur, projects NE.
 Descend 50 ft. to

23.00 Hollow, drains NE.
 Ascend 150 ft. to

Subdivision of T. 20 S., R. 14 E.

chains.

33.90 Rocky ridge; bears N. and S.
Gradually descend.

40.17 Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in a mound of stone and
earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec.
cor., with brass cap marked

S 29

$\frac{1}{4}$

S 32

1917

raise a mound of stone, 2 ft. base,
 $1\frac{1}{2}$ ft. high N. of cor.

Note: On account of natural obstacles,
I am unable to set post in the
ground.

40.50 Begin abrupt descent over ledges.

56.40 Base of ledges and hollow, 200 ft.
below ridge, drains S.

Thence over sandy land facing S.

67.00 Cottonwood wash, in hollow, 2 chs.
wide, some alkali water, drains
S.E.

Ascend.

75.00 Old wagon road, bears N. and S.E.

80.34 The cor. of secs. 29, 30, 31 and 32.
Land, mountainous, draining N.E.
on E. 33.90 chs., and S.W. on W,
46.44 chs.

Soil, rocky and sandy; 4 th. rate.

Sub-soil, rocky.

No timber

Undergrowth, short shadscale.

Some good grass for grazing.

Mountainous land, 80.34 chs.

July 23: At this sec. cor., I set off
 $20^{\circ} 03' N.$, on the decl. arc, and at
 $12^h 06^m$ g.m. l.m.t., observe the sun
on the meridian; the resulting
lat. is $39^{\circ} 03'$

Subdivision of T. 20 S., R. 14 E.

chains	
	N. $89^{\circ} 55\frac{1}{2}'$ W., on random line bet. secs. 30 and 31
40.00	Set temporary $\frac{1}{4}$ sec. cor.
80.44	Intersect W. bdy. of the tp. 15 lks. N. of the cor. of secs. 25, 30, 31 and 36 heretofore described
	Thence I run
	N. $89^{\circ} 59'$ E., on true line bet. secs. 30 and 31.
	Over rolling sandy land facing south, through short undergrowth of shadscale.
5.90	Wash, 20 lks. wide, 4 ft. deep, drains S.
35.40	Leave rolling sandy land, enter mountainous land, bears N. and S.
	Ascend 50 ft. to
37.20	Rocky ridge, bears N. and S.
	Descend abruptly 75 ft. to
40.44	Set an iron post, 3 ft. long, 1 in. in dia., 24 in. in a mound of stone and earth, 4 ft. base, 2 ft. high, for $\frac{1}{4}$ sec. cor., with brass cap marked
	$\begin{array}{r} S\ 30 \\ \frac{1}{4} \\ \hline S\ 31 \end{array}$
	1912
	raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.
	Note: On account of natural obstacles I am unable to set post in the ground.
	Gradually descend
45.40	Hollow, drains N. 30° E.
	Ascend 100 ft. to
55.40	Ridge, bears N. and S.
	Descend 100 ft. to
69.20	Hollow, drains NE.

Subdivision of T. 20 S., R. 14 E.

Chaus.

- Ascend 40 ft. to
 79.00 Rocky spur, projects 77.
 Descend.
 80.44 The cor. of secs. 29, 30, 31 and 32.
 Land, mountainous and rolling.
 Rolling land, draining SW. on W.
 35.40 chs., and mountainous land
 draining NE. on E 45.04 chs.
 Soil, rocky and sandy; 4 th. rate
 sub-soil, hard gravel and rocky.
 No timber
 Undergrowth, short shadscale.
 Good grass for grazing on W. 35.40 chs.
 Mountainous land 45.04 chs.
 July 23, 1917

- July 24: At 9^h. 06^m a.m. l.m.t., I
 set off 39° 03' on the lat. arc; 19° 53'
 N. on the decl. arc; and determine
 a meridian with the solar at the
 cor. of secs. 29, 30, 31 and 32.
 Thence I run
 77.0° 03' W., bet. secs. 29 and 30.
 Over mountainous land, through
 short undergrowth of shadscale.
 Descend 50 ft. to
 116.50 Cottonwood wash in hollow, 1.50 chs.
 wide, some alkali water, drains
 E.
 Old wagon road in wash, bears
 NW. and SE.
 Gradually ascend
 37.00 Base of high mountain, bears
 NW. and SE.
 Ascend abruptly 60 ft. over boulders
 to
 140.00 Set an iron post, 3 ft. long, 1 in. in
 dia., 24 ins. in a mound of stone
 and earth, 4 ft. base, 2 ft. high,
 for 1/4 sec. cor., with brass cap

Subdivision of T. 20 S., R. 14 E.

chain

marked

S 30	S 29
1/4	

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground

Continue to ascend.

43.80 Rocky spur, 90 ft. above 1/4 sec. cor., projects W.

Descend abruptly 150 ft. over ledges.

58.00 Hollow, drains SW.

Ascend abruptly 200 ft. to

65.00 Top of steep ascent and edge of mountain, bears NW. and SE

Gradually ascend 100 ft. to

80.00 Ridge, bears E. and W.

Set an iron post, 3 ft. long, 2 ins. in dia, 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high, for cor. of secs. 19, 20, 29 and 30, with brass cap marked

T 20 S	R 14 E
S 19	S 20
S 30	S 29

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

Land, mountainous, with a general SW. drain.

Soil, rocky on rocky sub-soil, 4th. rate.

Timber; a few cedar on N. 15 chs.

Subdivision of T. 20 S., R. 14 E.

chain.

Undergrowth, short shade-scale.
Mountainous land, 80.00 chs.

- S. $89^{\circ} 50' E.$, on random line bet. secs. 20 and 29
- 40.00 Set temporary $\frac{1}{4}$ sec. cor.
- 80.29 Intersect N. and S. line 5 lks. S. of the cor. of secs. 20, 21, 28 and 29. ^{v.}
Thence 2 run
N. $89^{\circ} 52' W.$, on true line bet. secs. 20 and 29.
- Over mountainous land, through short undergrowth of shade-scale.
- Ascend 50 ft. to
- 4.00 Spur, projects S. 3 chs.
- Descend 50 ft. to
- 7.30 Wash in canyon, 50 lks. wide, drains SE.
- Leave canyon, ascend 100 ft. to
- 29.30 Ridge, bears N. and S.
- Descend 60 ft. to
- 40.14 $\frac{1}{2}$ Set an iron post, 3 ft. long, 1 in. dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked
- | |
|-------------|
| S 20 |
| <u> </u> |
| S 29 |
| 1912 |
- raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.
- 45.00 Head of hollow, drains S.
- Ascend
- 50.25 Enter scattering scrub cedar, bears NE. and SW.
- 65.20 Enter ridge, bears W. and SE.
- 80.29 The cor. of secs. 19, 20, 29, and 30. Land, mountainous, with a general E. drain.
Soil, rocky; on rocky sub-soil; 4 th. rate.

Subdivision of T. 20 S., R. 14 E.

Chaus

Timber, scrub cedar on W. 15.00 chs.
 Good grass for grazing on W. 40.00 chs.

Land mountainous or heavily timbered 80.79 chs.

July 24: At this sec. cor., I set off $19^{\circ} 51' N.$, on the decl. arc; and at $12^h 06^m$ p.m. l.m.t., observe the sun on the meridian; the resulting lat. is $39^{\circ} 03'$.

S. $89^{\circ} 59' W.$, on random line bet. secs. 19 and 30

40.00 Set temporary $1/4$ sec. cor.

80.30 Intersect W. bdy. of the tp. 11 lks. S. of the cor. of secs. 19, 24, 25 and 30 heretofore described.

Thence, I run

S. $89^{\circ} 56' E.$, on true line bet. secs. 19 and 30.

Over mountainous land, through short undergrowth of shade-scale.

Gradually descend along top of spur, projecting E. 70 ft. to

11.00 Watch in hollow, 50 lks. wide, drains SE.

Ascend abruptly 50 ft. to

12.30 Top of ascent, thence over land facing S.

40.30 Set an iron post, 3 ft. long, 1 in. dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high, for $1/4$ sec. cor., with brass cap marked

S 19

1/4

S 30

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.

Note: On account of natural obstacles

Subdivision of T. 20 S., R. 14 E.

chains

- I am unable to set post in the ground.
 Descend 50 ft. to
 44.30 Wash in hollow, 25 lks. wide, drains S.
 Ascend.
 51.00 Base of high mountain, bears NW. and SE.
 Begin steep ascent of W. face of mountain over ledges and boulders.
 62.50 Top of mountain and ridge, 300 ft. above hollow, bears N. and S. 80° E.
 Enter scattering forest of scrub cedar and pinon.
 Gradually descend.
 80.30 The cor. of secs. 19, 20, 29 and 30. Land, mountainous with a general S. drain.
 Soil, rocky on rocky sub-soil; 4 th. rate.
 Timber, scrub cedar on E. 17.80 chs
 Undergrowth, short shadscale.
 Land mountainous or heavily timbered 80.30 chs.

July 24, 1912

July 25: at 8^h. 06^m. a. m. l. m. t.; I set off 39° 03' on the lat. arc; 19° 40' N., on the decl. arc; and determine a meridian with the solar at the cor. of secs. 19, 20, 29 and 30.

Thence I run

N. 0° 03' W., bet. secs. 19 and 20

Over mountainous land through scattering scrub cedar and undergrowth of shadscale.

Descend 50 ft. to

9.00 Hollow, drains E.

Ascend

Subdivision of T. 20 S., R. 14 E.

chains.

- 24.10 Spur, projects E.
Descend.
- 34.00 Head of hollow, drains W.
Gradually ascend
Note: Edge of mountain top, bears W. about 5 chs.
- 40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked

S 19	S 20
$\frac{1}{4}$	

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.
Note: on account of natural obstacles I am unable to set post in the ground

- 52.00 Begin steep ascent.
- 57.00 Spur, 80 ft. high projects NW.
Thence along nearly W. slope.
- 64.00 Hollow at head, drains W.
Ascend
- 76.00 Ridge, bears NW. and SE.
Thence descend through huge conglomerate boulders 50 ft. to
- 79.00 Head of hollow drains SE.
Ascend

- 80.00 Amongst huge boulders.
Set an iron post, 3 ft. long, 2 ins in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 17, 18, 19 and 20 with brass cap marked

T 20 S	R 14 E
S 18	S 17
S 19	S 20

1912

raise a mound of stone, 2 ft. base,

Subdivision of T. 20 S., R. 14 E.

chains.

1/4 ft. high W. of cor.

Note: On account of natural obstacles I am unable to set post in the ground.

Land mountainous near top of edge of high mountain, draining E. and W.

Soil, rocky; 4 th. rate.

Sub-soil, clay and rocky.

Timber, scattering scrub cedar and piñon.

Undergrowth, short shade-scale.

Land mountainous or heavily timbered 80.00 chs.

S. 89° 52' E., on random line bet. secs. 17 and 20.

40.00 Set temporary 1/4 sec. cor.

80.32 Intersect N. and S. line 14 lks. N. of the cor. of secs. 16, 17, 20 and 21. Thence I run

N. 89° 46' W., on true line bet. secs. 17 and 20.

Over rough mountainous land through short undergrowth of shade-scale.

Ascend 40 ft. to:

3.80 Spur, projects S.

12.00 Descend abruptly into large canyon hollow, 200 ft. below top, drains SE.

Ascend 50 ft. to:

18.60 Spur, projects S.

23.00 Descend 50 ft. to hollow; drains SE.

Ascend 50 ft. to:

31.00 Spur, projects SE.

35.40 Descend 50 ft. to hollow, drains SE.

Ascend abruptly from canyon over huge conglomerate boulders

Subdivision of T. 20 S., R. 14 E.

Chains.

40.16

Set an iron post, 3 ft. long, 1 in. in dia., 2 1/2 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for 1/4 sec. cor., with brass cap marked

S 17

1/4

S 20

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high N. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

49.00

Top of ridge and edge of canyon 150 ft. above 1/4 sec. cor., bears NE. and SW.

Enter scattering scrub cedar timber.

Thence gradually ascend over gentle NE. slope.

76.00

Ridge, bears NW. and SE. Leave cedar. Descend over huge boulders 50 ft. to

80.32

The cor. of secs. 17, 18, 19 and 20.

Land, mountainous with a general E. drain.

Soil, rocky on rocky sub-soil; 4 th. rate.

Timber, scrub cedar on 27.00 chs.

Undergrowth, short shadscale.

Land, mountainous or heavily timbered 80.32 chs.

N. 89° 56' W.; on random line bet. secs. 18 and 19.

40.00

Set temporary 1/4 sec. cor.

80.15

Intersect W. bdy. of the tp. 9 lks. S. of the cor. of secs. 13, 18, 19 and 24 heretofore described.

Thence I run

S. 89° 52' E., on true line bet. secs

Subdivision of T. 20 S., R. 14 E.

chains.

- 18 and 19.
Over mountainous land, through scattering forest of scrub cedar and undergrowth of shadscale.
Ascend 40 ft. to
6.90 Spur, projects S.
Descend 50 ft. to
19.20 Wash in hollow, 30 lks. wide, drains S.
Ascend 50 ft. to
21.30 Rocky ridge, bears N. and S.
✓ Descend 75 ft. to
40.15 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for 1/4 sec. cor., with brass cap marked

$$\begin{array}{r} S\ 18 \\ \hline 1/4 \\ \hline S\ 19 \end{array}$$

1912
raise a mound of stone, 2 ft. base, 1 1/2 ft. high N. of cor.
Note: On account of natural obstacles I am unable to set post in the ground.
- 47.50 Top of west side of box canyon, bears N. and S.
Leave scrub cedar timber
Descend abruptly 80 ft. to
50.00 Wash in canyon, 25 lks. wide, drains S.
Ascend abruptly 70 ft. to
51.20 Top of E. side of box canyon, bears N. and S.
Ascend 75 ft. to
69.20 Spur, projects S.
Descend 30 ft. to
72.50 Hollow, drains SW.
Ascend abruptly 100 ft. to
76.60 Top of high ridge, bears NW. and SE.

Subdivision of T. 20 S., R. 14 E.

Chains

80.15 Descend 50 ft. over huge boulders to
 The cor. of secs. 17, 18, 19 and 20.
 Land, mountainous draining S.
 on W. 76.60 chs. and E. on E. 3.55 chs.
 Soil, rocky; 4th. rate.
 Sub-soil, rocky.
 Timber, scrub cedar on W. 47.50 chs.
 Undergrowth, short shade-scale.
 Land, mountainous or heavily
 timbered 80.15 chs.
 July 25: At this sec. cor. I set off
 $19^{\circ} 38' N$, on the decl. arc; and at
 $12^h 06^m$ p.m. l.m.t., observe the
 sun on the meridian; the resulting
 lat. is $39^{\circ} 04'$

2.00 N. $0^{\circ} 03' W$, bet. secs. 17 and 18,
 Over mountainous land.
 Ascend abruptly over huge conglom-
 erate boulders.
 Top of ridge, 50 ft. above sec. cor.
 bears E. and W.
 Leave boulders, thence gradually
 descend over gentle NE. slope,
 through scattering scrub cedar
 timber and short undergrowth
 of shade-scale.
 26.20 Hollow, 50 ft. deep, drains NE.
 Gradually ascend.
 40.00 On low ridge, bears NE. and SW.
 Set an iron post, 3 ft. long, 1 in. in
 dia., 24 ins. in a mound of stone
 and earth, 4 ft. base, 2 ft. high for
 1/4 sec. cor., with brass cap marked

S 18 | S 17
 1/4

1912

raise a mound of stone, 2 ft. base,

Subdivision of T. 20 S., R. 14 E.

chain.

1 1/2 ft. high W. of cor.

Note: On account of natural obstacles I am unable to set post in the ground.

Gradually descend.

80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 2 1/2 ins. in the ground for cor. of secs. 7, 8, 17 and 18, with brass cap marked

T 20 S	R 14 E
S 7	S 8
S 18	S 17
1912	

dig pits, 18 x 18 x 12 ins., in each sec., 5 1/2 ft. dist., raise a mound of earth, 4 ft. base, 2 ft. high W. of cor. Land, mountainous, with a general E. drain.

Soil, gravelly and rocky; 4 th. rate. Timber, scrub cedar on N. 78 chs. Undergrowth, short shade-scale. Land, mountainous or heavily timbered 80.00 chs.

S. 89° 46' E., on random line bet. secs. 8 and 17.

40.00 Set temporary 1/2 sec. cor.

80.36 Intersect N. and S. line at the cor. of secs. 8, 9, 16 and 17.

Thence I run

N. 89° 46' W., on true line bet. secs. 8 and 17.

Over rolling mountainous land through scattering scrub cedar timber and undergrowth of short shade-scale.

Ascend 60 ft. to

12.00 Low ridge, bears NE. and SW.

Descend 50 ft. to

20.70 Hollow, drains NE.

Subdivision of T. 20 S., R. 14 E.

Chains

- 25.60 Ascend 50 ft. to
Low ridge, bears N. and S.
Gradually descend.
- 40.18 Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in the ground for $\frac{1}{4}$
sec. cor., with brass cap marked
S 8
1/4
S 17
1912
- dig pits, 18 x 18 x 12 ins., E. and W.
of post, 3 ft. dist., raise a mound
of earth, $3\frac{1}{4}$ ft. base, $1\frac{1}{2}$ ft. high N. of
cor.
- 55.40 Wash, 1 ch. wide, 5 ft. deep,
drains SE.
Enter solid bed rock of conglomerate
formation
- 74.80 Same wash, drains NE.
Leave solid bed rock.
- 80.36 The cor. of secs. 7, 8, 17 and 18.
Land rolling mountainous with
a general E. drain.
Soil, rocky and sandy; 4 th. rate
Sub-soil, hard gravel and rocks.
Timber scattering scrub cedar.
Undergrowth, short shade-scale.
Some good grass for grazing.
Land mountainous or heavily
timbered 80.36 chs.

July 25, 1912

July 26: At 7^h. 06^m. a.m. l.m.t.,
I set off $39^{\circ} 05'$ on the lat. arc; 19°
 $28'$ N., on the decl. arc; and
determine a meridian with the
solar at the cor. of secs. 7, 8, 17 and
18.

Thence I run

N. $89^{\circ} 52'$ W., on random line bet.

Subdivision of T. 20 S., R. 14 E.

Chain	
	secs. 7 and 18
40.00	Set temporary $\frac{1}{4}$ sec. cor.
80.08	Intersect W. bdy. of the tp. 12 lks. S. of the cor. of secs. 7, 12, 13 and 18 heretofore described.
	Thence I run S. $89^{\circ} 47'$ E., on true line bet. secs. 7 and 18.
	Over mountainous land, through scattering forest of scrub cedar.
	Descend 50 ft. to
4.50	Hollow, drains NE.
	Thence over land facing N.
38.00	West side of hollow, bears N. and S.
	Descend abruptly 50 ft. to
39.75	Wash in hollow, 20 lks. wide, drains N.
	Ascend.
40.08	Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked
	$\begin{array}{c} S 7 \\ \frac{1}{4} \\ \hline S 18 \\ 1912 \end{array}$
	raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.
	Note: On account of natural obstacles, I am unable to set post in the ground.
41.30	Top of east side of hollow, bears N. and S.
	Thence over broken rocky land facing NE.
77.00	Hollow, 30 ft. deep, drains N. Gradually ascend.
80.08	The cor. of secs. 7, 8, 17 and 18. Land, mountainous draining NE. Soil, rocky; 4 th. rate

Subdivision of T. 20 S., R. 14 E.

chain

Sub-soil, rocks.
 Timber, scrub cedar.
 No Undergrowth.
 Land mountainous or heavily
 timbered 80.08 chs.

N. 0° 03' W., bet. secs. 7 and 8.

Over rolling mountainous land,
 through short undergrowth of
 shade scale and scattering scrub
 cedar and pinon timber.

Gradually descend.

25.00 Hollow, 50 ft. below sec. cor.,
 drains NE.

Thence over land facing E.

38.00 Hollow, 50 ft. deep, drains NE.

40.00 Set an iron post, 3 ft. long, 1 in. in
 dia., 24 ins. in the ground for $\frac{1}{4}$
 sec. cor., with brass cap marked

S 7 | S 8
 $\frac{1}{4}$ |

1912

raise a mound of stone, 2 ft.
 base, $1\frac{1}{2}$ ft. high W. of cor.

42.20 Enter same hollow.

46.70 Leave hollow, turn NE.

52.00 Wash in hollow, 40 lks. wide,
 drains NE.

Ascend

57.00 Spur, projects E.

Descend.

72.00 Head of hollow, drains E.

Ascend.

77.00 Top of ledge, 20 ft. high, bears NW.
 and SE.

Descend into Paleratus wash.

80.00 Set an iron post, 3 ft. long, 2 ins. in
 dia., 24 ins. in the ground for cor.
 of secs. 5, 6, 7 and 8, with brass

Subdivision of T. 20 S., R. 14 E.

Chains

caps marked

T 20 S	R 14 E
S 6	S 5
S 7	S 8

1912.

raise a mound of stone, 2 ft. base,
1 1/2 ft. high W. of cor.

Land, mountainous with a
general N. drain.

Soil, rocky and gravelly; 4 lbs.
rate.

Sub-soil, rocky.

Timber, scattering scrub cedar.

Undergrowth, short shadscale.

Good grass for grazing.

Mountainous or timbered land,
6000 chs.

S. 89° 46' E., on random line bet. secs.
5 and 8.

40.00 Set temporary 1/4 sec. cor.

80.38 Intersect N. and S. line, 3 lbs. S.
of the cor. of secs. 4, 5, 8 and 9.

Thence S run

N. 89° 47' W., on true line bet. secs. 5
and 8.

Over mountainous land, through
short undergrowth of shadscale.

Ascend 50 ft. to

70.40 Spur, projects N.

Descend 50 ft. to

25.70 Hollow, drains NE.

Ascend 90 ft. to

30.20 Ridge, bears NE. and S.

Descend 70 ft. to

40.19 Point for 1/4 sec. cor. falls in wash,

40 lbs. wide, 2 ft. deep, course S.

No cor. set.

40.48 Set an iron post, 3 ft. long, 1 in. in
dia., 24 in. in the ground for

Subdivision of T. 20 S., R. 14 E.

chains.

Witness corner to the $\frac{1}{4}$ sec. cor.,
with brass cap marked.

T20 S R14 E

S5 .wc $\frac{1}{4}$

S8

1912

raise a mound of stone, 2 ft. base,
 $1\frac{1}{4}$ ft. high N. of cor.

Ascend.

42.40 Low spur, projects S.

Ascend 30 ft. to

46.40 Wash, 15 lks. wide, 5 ft. deep,
drains S.

Ascend 30 ft. to

52.40 Spur, projects S.

Thence over land facing nearly S.

58.30 Wash, 40 lks. wide, 10 ft. deep,
drains S.

62.40 Wash, 20 lks. wide, 10 ft. deep,
course S.

75.40 Salerat us Creek wash in hollow,
2 chs. wide, channel dry, drains
SE.

Ascend.

80.38 The cor. of secs. 5, 6, 7 and 8.
Land, mountainous draining NE
on E. 30.70 chs. and S. on W. 50.18
chs.

Soil, rocky on rocky sub-soil of
volcanic formation; 4 th. rate.

No timber.

Undergrowth, short shade-scale.
Good grass for grazing on W. 40 chs.
Mountainous land, 80.38 chs.

July 26: The sky is overcast at noon
observations for lat. impossible

N. $89^{\circ} 47'$ W., on random line bet.
secs. 6 and 7.

40.00 Set temporary $\frac{1}{4}$ sec. cor.

Subdivision of T. 20 S., R. 14 E.

Chaus

79.98 Intersect W. bdy. of the tp. 12 lks. S. of the cor. of secs. 1, 6, 7 and 12 heretofore described.

Thence I run S. $89^{\circ} 4\frac{1}{2}'$ E., on true line bet. secs. 6 and 7.

Over rolling mountainous land, through short undergrowth of shadscale. Gradually ascend.

18.00 Low ridge, bears N. and S. Enter scrub cedar timber, bears N. and S.

Descend 100 ft. to

28.00 Hollow, drains NE.

Thence over land facing N.

39.98 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S 6
 $\frac{1}{4}$

S 7

1912

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist, raise a mound of earth, $3\frac{1}{4}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.

74.30 Top of 20 ft. ledge, bears NW, and SE.

Descend into Palerat us Creek wash.

79.98 The cor. of secs. 5, 6, 7 and 8.

Land, mountainous with a general NE. drain.

Soil, rocky and gravelly; 4 th. rate.

Timber scrub cedar on E. 61.98 chs.

Undergrowth, short, shadscale.

Good grass for grazing.

Land mountainous or heavily timbered 79.98 chs.

Subdivision of T. 20 S., R. 14 E.

Chaus.

Having resurveyed the N. bdy. of this tp. and knowing that a closing cor. is necessary bet. secs. 5 and 6.

I run

N. $0^{\circ} 03' W.$, on true line bet. secs. 5 and 6.

Over mountainous land.

Miscued through greasewood undergrowth towards Saleratus Creek Wash.

10.00 Saleratus creek wash, 2 chs. wide, channel dry, course SE.

Leave greasewood undergrowth, Begin ascent over solid conglomerate bed rock, and through scattering scrub cedar timber.

40.00 125 ft. above wash.

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked

S 6 | S 5
 $\frac{1}{4}$ |

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

Continue to ascend.

68.80 Top of high ridge, 100 ft. above $\frac{1}{4}$ sec. cor., bears NW. and SE.

Thence over land facing nearly E.

80.50 Intersect N. bdy. of the tp. 64 lks.

N. $89^{\circ} 49' W.$ of the Cor. of secs. 5, 6, 31 and 32 heretofore described.

Set an iron post, 3 ft. long, 2 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for closing cor. of secs. 5 and 6. with brass cap marked

Subdivision of T. 20 S., R. 14 E.

Chaus

T 20 S R 14 E
S 31 cc | S 32
S 6 | S 5
1912

raise a mound of stone, 2 ft. base,
1 1/2 ft. high S. of cor.

Note: On account of natural obstacles
I am unable to set post in the
ground.

I destroy all marks on old cor.
pertaining to secs. 5 and 6.

Land mountainous, draining N. to
Saleratus creek wash on S. 10 chs.
and S. to same wash on N. 70.50 chs.
Soil, rocky and gravelly; 4th. rate.
Sub-soil, rocks.

Timber, scrub cedar on N. 70.50 chs.
Undergrowth, greasewood about 3
ft. high on S. 10 chs.

Good grass for grazing on S. 10 chs.
Land mountainous or heavily
timbered 80.50 chs.

July 26, 1912.

General Description.

This township contains nearly every
variety of land ranging from plains
to rough mountains and the soil
ranges from sandy loam to rocks.
The soil of the eastern two tiers of
secs. of this township is a blue clay
and some sandy loam and might be
classed as second rate. The surface
soil, however, is not very deep,
ranging from 1 to 4 ft., and has for
a sub-soil a hard shale rock or
hard pan. This soil however contains
much alkali. The soil of the remain-
ing part is chiefly rocky and can

General Description.

be classed as 4th. rate.

A scrubby growth of cedar trees, which are of no commercial value is found in the western half of the tp., while a short undergrowth of shadscale predominates over the entire tp. Mesquite greasewood undergrowth is found along the Saleratus Creek wash, a short growth of bunch grass is found over the entire township which affords good feed for cattle and sheep during the winter months.

This township is drained by the Saleratus wash which flows in a south easterly direction through the township. Many alkali seeps are found along this wash but are unfit for private use. Water may be secured at the cistern at Mesert switch a station on the Denver and Rio Grande railroad in sec. 11. There is no other water in the township.

Prospects for oil have been made in the western tier of secs. of this township, but I find no indications of it. There is no indication of any other mineral in this township.

There are no settlers in this township, except the section hands at Mesert who work for the railroad.

Howard W. Miller.
U. S. Surveyor.

Miller

Blank

Page

BOOK A-399

CERTIFICATE OF ASSISTANTS.

We, the undersigned, hereby certify upon honor that we assisted, to the best of our skill and ability, _____, U. S. Surveyor, during the periods and in the capacities stated opposite our several signatures, in surveying all those parts or portions of _____

For certificate of assistants see book "D" T?23 S., R.13 E.

of the _____ Meridian, in the State of _____ which are represented in the foregoing field notes as having been executed by him, and under his direction; and that said survey has been, in all respects, to the best of our knowledge and belief, well and faithfully executed.

Table with 3 columns: NAME, PERIOD OF SERVICE (BEGUN, ENDED), and CAPACITY. The table is mostly empty with some faint handwritten entries.

Subscribed and certified to before me on the dates of the final service as shown above.

U. S. Surveyor.

FINAL OATH OF UNITED STATES SURVEYOR.

I, _____, U. S. Surveyor, do solemnly swear that, in pursuance of special instructions received from the U. S. Surveyor General for _____ bearing date of the _____ day of _____, 191 _____, I have well, faithfully, and truly, in my own proper person, and in strict conformity with said instructions, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of _____

For final oath of U.S. Surveyor see book "D" T. 23 S. R. 13 E.

_____ of the _____ Meridian, in the State of _____, which are represented in the foregoing field notes as having been executed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the U. S. Surveyor General for _____ and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

U. S. Surveyor.

Subscribed by said _____, and sworn to before me } this _____ day of _____, 191 _____



APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL, Salt Lake City, Utah, March 8, 1915.

The foregoing field notes of the ~~survey~~ retracement and resurvey of the Fourth Standard Parallel South, through Range 14 East; and the resurvey of the east, west, and north boundaries, and the survey of the subdivisional lines of Township No. 20 South, Range No. 14 East of the Salt Lake Base and Meridian, Utah

executed by _____ Howard W. Miller under his special instructions dated _____ June 10 _____, 191 _____, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the retracements, resurveys and surveys they describe, are hereby approved.

[Signature]
U. S. Surveyor General.

I certify that the foregoing transcript of the field notes of the above-described surveys in _____, has been correctly copied from the original notes on file in this office.

Blank

Page

100

Blank

Page

BOOK A-399
B.

JWE.
ER.
ER.
MKW.

FIELD NOTES

OF THE SURVEY OF THE

RET. AND SURVEY OF E., RES. OF N. AND S., RES. AND SURVEY OF W. BDRS.

TOWNSHIP 24 SOUTH, RANGE 13 EAST,

RET. AND RES. OF E. AND SUR. W. AND N. BDRS. TOWNSHIP 23 SOUTH, RANGE 13 EAST,

SURVEY OF FRACTIONAL NORTH BOUNDARY TOWNSHIP 22 SOUTH, RANGE 14 EAST,

AND

RESURVEY AND SURVEY OF EAST AND SURVEY OF WEST AND NORTH BDRS.

TOWNSHIP 22 SOUTH, RANGE 13 EAST,

Of the SALT LAKE BASE AND Meridian,

In the State of UTAH

EXECUTED BY

HOWARD W. MILLER AND ROBERT E. CLARK,

and Transitman

In the capacity of U. S. Surveyor, under instructions dated June 10, 1912,

issued by the United States Surveyor General to govern surveys included in

Group No. 18, which were approved by the Commissioner of the General Land

Office, June 19, 1912, pursuant to authority contained in the Act of

Congress dated , 191

Survey commenced July 30, 1912

Survey completed November 2, 1912.

Handwritten notes:
1912-1913
1913-1914
1914-1915
1915-1916
1916-1917
1917-1918
1918-1919
1919-1920
1920-1921
1921-1922
1922-1923
1923-1924
1924-1925
1925-1926
1926-1927
1927-1928
1928-1929
1929-1930
1930-1931
1931-1932
1932-1933
1933-1934
1934-1935
1935-1936
1936-1937
1937-1938
1938-1939
1939-1940
1940-1941
1941-1942
1942-1943
1943-1944
1944-1945
1945-1946
1946-1947
1947-1948
1948-1949
1949-1950
1950-1951
1951-1952
1952-1953
1953-1954
1954-1955
1955-1956
1956-1957
1957-1958
1958-1959
1959-1960
1960-1961
1961-1962
1962-1963
1963-1964
1964-1965
1965-1966
1966-1967
1967-1968
1968-1969
1969-1970
1970-1971
1971-1972
1972-1973
1973-1974
1974-1975
1975-1976
1976-1977
1977-1978
1978-1979
1979-1980
1980-1981
1981-1982
1982-1983
1983-1984
1984-1985
1985-1986
1986-1987
1987-1988
1988-1989
1989-1990
1990-1991
1991-1992
1992-1993
1993-1994
1994-1995
1995-1996
1996-1997
1997-1998
1998-1999
1999-2000
2000-2001
2001-2002
2002-2003
2003-2004
2004-2005
2005-2006
2006-2007
2007-2008
2008-2009
2009-2010
2010-2011
2011-2012
2012-2013
2013-2014
2014-2015
2015-2016
2016-2017
2017-2018
2018-2019
2019-2020
2020-2021
2021-2022
2022-2023
2023-2024
2024-2025

BOOK A-399

INDEX DIAGRAM.

Township Range

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Survey and Retracement of the East Boundary of T. 24 S., R. 13 E.

chains.

Survey commenced July 30, 1912 and executed with a W. and L. E. Gurley solar compass No. 1043. For description and test of instrument see book "A" of this survey.

I examine the adjustments of the compass and correct the level and collimation errors; then, to test the solar apparatus, by comparing its indications, resulting from solar observations made during p.m. and a.m. hours with a meridian determined by observations made on Polaris I proceed as follows:

At my camp which is situated near the cor. of secs. 19, 24, 25 and 30, ^{on the E. bdy. of the tp.} in approximate lat. $38^{\circ} 42' 34''$ N., longitude $110^{\circ} 27' 19''$ W. I set off $38^{\circ} 43'$ on the lat. arc; $18^{\circ} 27'$ N., on the dial. arc; and at $5^{\text{h.}} 06^{\text{m.}}$ p.m. l.m.t., determine with the solar a meridian, and mark a point thereof on a stone firmly set in the ground 5 chs. N. of my station.

At $10^{\text{h.}} 59^{\text{m.}}$ p.m. l.m.t., by my watch I observe Polaris at eastern elongation in accordance with the Manual of Instructions and mark a point in the line thus determined by a tack driven in a picket, firmly set, 5 chs. N. of my station.

July 30, 1912

July 31: At $6^{\text{h.}} 45^{\text{m.}}$ a.m. I lay off the azimuth of Polaris $1^{\circ} 30'$ to the west and find that my Polaris meridian agrees with the solar meridian of July 30, 1912

At $7^{\text{h.}} 06^{\text{m.}}$ a.m. l.m.t., I set off $39^{\circ} 03'$ on the lat. arc; $18^{\circ} 18'$ N., on

Survey and Retracement of the East Boundary of T. 24 S.

chains

the decl. arc; and determine a meridian with the solar. This meridian also agrees with the Polaris meridian and the solar meridian of July 30. I therefore know my instrument to be in perfect adjustment.

The magnetic bearing of the true meridian at 7^h. 30^m. a.m. is $N. 15^{\circ} 20'$ W., the angle thus determined gives the magnetic decl. $15^{\circ} 20'$ E.

I begin at the cor. of Ts. 24 and 25 S., Rs. 13 and 14 E., which is a sandstone $12 \times 12 \times 5$ ins., above ground, firmly set and marked and witnessed as described by the Surveyor General.

July 31: At this cor. I set off $18^{\circ} 14'$ N., on the decl. arc; and at 12^h. 06^m. p.m. l.m. t., observe the sun on the meridian, the resulting lat. is $38^{\circ} 41'$.

Thence I run

40.20 North, retracing bet. secs. 31 and 36. Fall 9' lks. W. of the $\frac{1}{4}$ sec. cor., which is a sandstone $14 \times 10 \times 2$ ins., above ground, firmly set and marked and witnessed as described by the Surveyor General.

The true bearing of this line is $N. 0^{\circ} 08'$ E., and the distance is 40.20 chs.

From the $\frac{1}{4}$ sec. cor. I continue North.

40.40 Fall 9' lks. W. of the cor. of secs. 25, 30, 31 and 36 which is a sandstone $24 \times 16 \times 4$ ins., above ground, firmly set and marked and witnessed as described by the Surveyor General.

The true bearing of this line is $N. 0^{\circ} 08'$ E., and the distance is 40.40 chs.

Survey and Retracement of the East Boundary of T. 24 S. R.

chains.

40.06 North, retracing bet. secs. 25 and 30
Fall 26 lks. W. of the $\frac{1}{4}$ sec. cor.,
which is a slate stone, 18 x 10 x 1 ins,
above ground, firmly set; and marked
and witnessed as described by the
Surveyor General.

The true bearing of this line is $N. 0^{\circ} 22'$
E., and the distance is 40.06 chs.

From the $\frac{1}{4}$ sec. cor. I continue
North.

39.78 Fall 10 $\frac{1}{2}$ lks. W. of the cor. of secs. 19, 24
25 and 30 which is a sandstone 14 x
5 x 2 ins., above ground, firmly set
and marked and witnessed as describ-
ed by the Surveyor General.

The true bearing of this line is $N. 0^{\circ} 09'$
E., and the distance is 39.78 chs.

July 31, 1912

August 1: At 7^h. 06^m. a.m. l.m.t., I set
off $38^{\circ} 43'$ on the lat. arc; $18^{\circ} 03'$ N. on
the decl. arc; and determine a
meridian with the solar at the cor.
of secs. 19, 24, 25 and 30

Thence I run

41.77 North, retracing bet. secs. 19 and 24.
Fall 13 lks. E. of the $\frac{1}{4}$ sec. cor.,
which is a greatly decayed cottonwood
post with marks nearly obliterated.
and witnessed as described by the
Surveyor General.

The true bearing of this line is $N. 0^{\circ} 11' W.$
and the distance is 41.77 chs.

From the $\frac{1}{4}$ sec. cor. I continue
North.

38.79 Fall 4 $\frac{1}{2}$ lks. W. of the cor. of secs. 13,
18, 19 and 24 which is a sandstone
10 x 9 x 6 ins., above ground, firmly set
and marked and witnessed as describ-
ed by the Surveyor General.

Survey and Retracement of the East Boundary of T. 24 S., R. 13 E.

Chains:

The true bearing of this line is $N. 0^{\circ} 36' E.$
and the distance is 38.79 chs.

40.44 North, retracing bet. secs. 13 and 18.
Fall 26 lks. W. of evident remains
of the $\frac{1}{4}$ sec. cor. which is a small
group of stones on solid sandstone
bedrock.

The true bearing of this line is $N. 0^{\circ} 22' E.$
and the distance is 40.44 chs.
From the $\frac{1}{4}$ sec. cor. I continue
North.

40.30 Fall 12 lks. W. of the cor. of secs. 7,
12, 13 and 18, which is a sandstone
 $18 \times 14 \times 5$ ins., above ground, firmly set,
and marked and witnessed as describ-
ed by the Surveyor General.

The true bearing of this line is $N. 0^{\circ} 10' E.$
and the distance is 40.30 chs.

40.29 North, retracing bet. secs. 7 and 12.
Fall 31 lks. W. of the $\frac{1}{4}$ sec. cor., which
is a greatly decayed cottonwood post,
marked and witnessed as described by
the Surveyor General.

The true bearing of this line is $N. 0^{\circ} 27' E.$
and the distance is 40.29 chs.
From the $\frac{1}{4}$ sec. cor. I continue
North.

40.28 Fall 16 lks. W. of the cor. of secs. 1, 6,
7 and 12 which is a sandstone $20 \times 10 \times$
 4 ins. above ground, firmly set and
marked and witnessed as described
by the Surveyor General.

The true bearing of this line is $N. 0^{\circ} 14' E.$
and the distance is 40.28 chs.

40.00 North, retracing bet. secs. 1 and 6.
No trace of the $\frac{1}{4}$ sec. cor. can be
found.

Survey and Retracement of the East Boundary of T. 24 S., R. 13 E.

Chains.

87.23

Found 2.85 chs. W. of the cor. of Ts. 23 and 24 S., Rs. 13 and 14 E., which is a sandstone 24 x 14 x 8 ins., firmly set in a mound of stone and marked and witnessed as described by the Surveyor General.

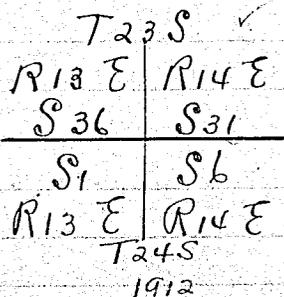
The true bearing of this line is $77^{\circ}52'$ E., and the distance is 87.27 chs.

August 1: At this cor., I set off $17^{\circ}59'$ N., on the decl. arc; and at 12^h. 06 m. p.m. l.m. t., observe the sun on the meridian; the resulting lat. is $38^{\circ}46'$

This range line deviates more than 21' per mile from a true meridian, and most every mile is out of limits in distance. As T. 24 S., R. 14 E. has been subdivided and subdivisions are dependent upon this old line the cor. must remain unchanged. I therefore survey this range line setting sec. and 1/4 sec. cor. for T. 24 S., R. 13 E. and reestablish old sec. cor. for two secs. and quarter secs. referring to T. 24 S., R. 14 E. as follows:

I destroy all traces of the old cor. of Ts. 23 and 24 S., Rs. 13 and 14 E., and reestablish it at the same point as follows:

Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of Ts. 23 and 24 S., Rs. 13 and 14 E., with brass cap marked.



Survey and Retracement of the East Boundary of T. 24 S., R. 13 E.

chains

raise a mound of stone, $2\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high S. of cor.

Note: On account of natural obstacles I am unable to set post in the ground.

Thence I run

S. $1^{\circ}52'$ W., bet. secs. 1 and 6.

Ascend over rocky N. slope of mountainous land.

7.00 Rocky spur, 70 ft. high, projects W. Descend 40 ft. to

8.70 Hollow drains W.

Ascend 40 ft. to

10.00 Top of steep ascent, bears E. and W. Gradually ascend through short undergrowth of shadscale.

42.47 A southing of 42.45 chs.

The point for the $\frac{1}{4}$ sec. cor. on the W. bdy. of sec. 6, T. 24 S., R. 14 E., and the $\frac{1}{4}$ sec. cor. on the E. bdy. of sec. 1, T. 24 S., R. 13 E., will fall on deep shifting sand where cor. will soon disappear. I therefore perpetuate cor. on solid ground as follows:

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for witness cor. to the $\frac{1}{4}$ sec. cor. of secs. 1 and 6 with brass cap marked.

T 24 S

R 13 E R 14 E

S 1 | S 6

W $\frac{1}{4}$

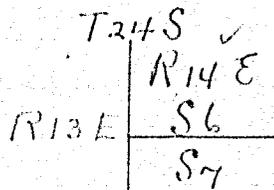
1912 |

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high W. of cor.

43.00 Enter deep shifting sand, bears E. and W.

Survey and Retracement of the East Boundary of T. 24 S., R. 13 E.

- Chains
- ✓ Ascend.
 - 43.63³/₄ A southing of 43.61¹/₄ chs.
Point for $\frac{1}{4}$ sec. cor. on the W. bdy. of sec. 6, T. 24 S., R. 14 E. on shifting sand. cor. not set.
 - 47.00 Top of sandy ridge, 75 ft. above witness cor., projects NE. and SW.
Ascend.
 - 49.58 A southing of 49.56 chs.
Point for $\frac{1}{4}$ sec. cor. on the E. bdy. of sec. 1, T. 24 S., R. 13 E., falls on shifting sand. No cor. set.
 - 62.00 Hollow, 50 ft. deep, drains NE.
Leave deep shifting sand.
Ascend 60 ft. to
 - 73.60 Ridge, bears E. and W.
Ascend 40 ft. to
 - 87.27 A southing of 87.23 chs.
The cor. of secs. 1, 6, 7 and 12. I destroy all traces of the old cor. and reestablish it at the same point as follows:
Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for cor. of secs. 6 and 7 on the W. bdy. of T. 24 S., R. 14 E., with brass cap marked

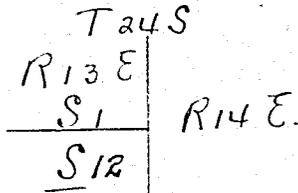


1912

- dig pits, 24 x 24 x 12 ins. in each sec., 6 ft. dist., raise a mound of earth 4 ft. base, 2 ft. high E. of cor.
- thence S. 0° 14' W., with continuous chaining
- 89.58 A southing of 89.54 chs.
Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for cor. of secs. 1 and 12 on the E. bdy. of T. 24 S., R. 13 E., with brass cap marked

Survey and Retracement of the East Boundary of T. 24 S., R. 13 E.

Chains.



1912.

dig pits, 24 x 24 x 12 ins. in each sec. 6 ft. dist., raise a mound of earth 4 ft. base, 2 ft. high W. of cor.

Land, mountainous with a general NE. drain

Soil, N. 10 chs. rocky on rocky sub-soil, 4th. rate. S. 79.58 chs. sandy soil on sand and gravel sub-soil, very dry; 3rd. rate.

No timber.

Undergrowth, short shadecale.

Good grass for grazing.

Mountainous land 89.58 chs.

S. 0° 14' W., on E. bdy. of sec. 12.

Over hilly land, gradually descending through short shadecale undergrowth and deep sand.

20.00 Hollow, drains NE.

Gradually ascend.

37.97 The old 1/4 sec. cor. I destroy old cor. and reestablish it at the same point as follows:

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor. on the W. bdy. sec. 7, T. 24 S., R. 14 E., with brass cap marked.

S 7 1/4

1912

dig pits, 18 x 18 x 12 ins., N. and S. of post; 3 ft. dist., raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high E. of cor. Thence S. 0° 27' W., with continuous

Survey and Retracement of the East boundary of T. 24 S., R. 13

Chains

chaining

40.00

On low ridge, bears E. and W.
Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor. on the E. bdy. sec. 12, T. 24 S., R. 13 E. with brass cap marked.

S 12 $\frac{1}{4}$ ✓

1912

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high W. of cor.

Gradually descend over gentle SW. slope.

78.76 ✓

The cor. of secs. 7, 12, 13 and 18. I destroy all traces of old cor. and reestablish at the same point as follows: Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for cor. of secs. 7 and 18 on the W. bdy. of T. 24 S., R. 14 E., with brass cap marked.

T 24 S ✓

R. 13 E.	R 14 E
	S 7
	S 18

1912

dig pits, 24 x 24 x 12 ins., in each sec. 6 ft. dist., raise a mound of earth 4 ft. base, 2 ft. high E. of cor.

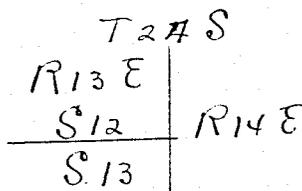
thence

80.00

S. $0^{\circ} 10'$ W., with continuous chaining
Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for cor. of secs. 12 and 13 on the E. bdy. of T. 24 S., R. 13 E., with brass cap marked

Survey and Retracement of the East Boundary of T. 24 S. R. 13 E.

chain



1912.

dig pits, 24 x 24 x 12 ins. in each sec.
6 ft. dist., raise a mound of earth,
4 ft. base, 2 ft. high W. of cor.
Land, hilly draining NE. on N. 40 chs.
and SW. on S. 40 chs.

Soil, sandy surface, sub-soil,
gravel and sand very hard and dry.
3rd. rate.

No timber.

Undergrowth, short shade-scale.

Good grass for grazing.

S. 0° 10' W., on the E. bdy. of sec. 13.
Gradually descend over rolling
land sloping SW., through short
undergrowth of shade-scale.

22.00 Hollow, 30 ft. deep, drains SW.

Ascend 25 ft. to

25.00 Spur, projects W.

Descend gradually.

38.56 The old 1/4 sec. cor. I destroy all traces
of the old cor. and reestablish it at
the same point as follows:

Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in a mound of stone
and earth 4 ft. base, 2 ft. high for
1/4 sec. cor. on the W. bdy. of sec. 18,
T. 24 S., R. 14 E., with brass cap
marked

S 18 1/4

1912

raise a mound of stone, 2 ft. base,
1 1/2 ft. high E. of cor.

Survey and Retracement of the East Boundary of T. 24 S., R. 13

Chains

Note: On account of natural obstacles, I am unable to set post in the ground.

Thence

40.00

S. $0^{\circ} 22' W.$, with continuous chaining set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor. on the E. bdy. of sec. 13, T. 24 S., R. 13 E., with brass cap marked

S 13 $\frac{1}{4}$

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

47.00

Wash in large flat hollow, 50 lks. wide, drains E.

79.00

The old cor. of secs. 13, 18, 19 and 24. I destroy all traces of old cor. and reestablish it at the same point as follows.

Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for cor. of secs. 18 and 19 on the W. bdy. of T. 24 S., R. 14 E., with brass cap marked

T 24 S

	R 14 E
R 13 E	S 18
	S 19

1912

dig pits, 24 x 24 x 12 ins., in each sec., 6 ft. dist; raise a mound of earth, 4 ft. base, 2 ft. high E. of cor.

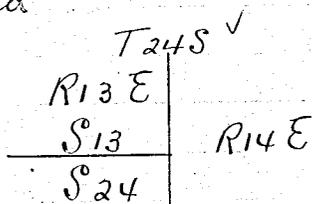
Thence

Survey and Retracement of the East Boundary of T. 24 S.

Chains

80.00

S. $90^{\circ}36'$ W., with continuous chaining
Set an iron post, 3 ft. long, 3 ins. in
dia., 24 ins. in the ground for
cor. of secs. 13 and 24 on the E. bdy.
of T. 24 S., R. 13 E., with brass cap
marked



1912.

dig pits, 24 x 24 x 12 ins., in each sec.,
6 ft. dist., raise a mound of earth,
4 ft. base, 2 ft. high W. of cor.

Land rolling with a general S. and
E. drain.

Soil, sandy on hard sand and gravel
sub-soil, 3rd. rate.

No timber.

Undergrowth, short shadscale.

Good grass for grazing.

37.79

S. $0^{\circ}36'$ W., on E. bdy. of sec. 24.

Over gently rolling sandy land
draining E., through short under-
growth of shadscale.

The old $\frac{1}{4}$ sec. cor. I destroy all traces
of the old cor. and reestablish it at
the same point as follows:

Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in the ground for $\frac{1}{4}$ sec.
cor. on the W. bdy. of sec. 19, T. 24 S.,
R. 14 E., with brass cap marked

S 19 $\frac{1}{4}$

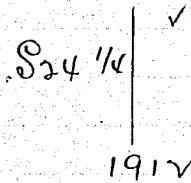
1912

dig pits, 18 x 18 x 12 ins., N. and S. of
post, 3 ft. dist., raise a mound of
earth, 3 $\frac{1}{2}$ ft. base, 1 $\frac{1}{2}$ ft. high E. of cor.

Survey and Retracement of the East Boundary of T. 24 S., R. 13 E.

Chains.

Thence
 S. $0^{\circ} 11' E$, with continuous chaining
 40.00 Set an iron post, 3 ft. long, 1 in. in
 dia., 24 ins. in the ground for $\frac{1}{4}$ sec.
 cor. on the E. bdy. of sec. 24, T. 24 S.,
 R. 13 E., with brass cap marked



dig pits, 18 x 18 x 12 ins., N. and S. of
 post, 3 ft. dist., raise a mound of
 earth, $3\frac{1}{4}$ ft. base, $1\frac{1}{2}$ ft. high W. of
 cor.

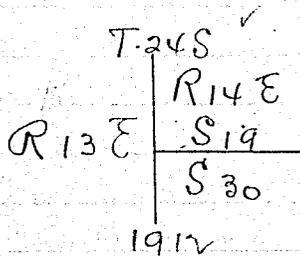
Thence over sandy land near W. end
 of dry lake bed.

69.50 Wash, 40 lks. wide, 5 ft. deep, drained
 NE.

Gradually ascend.

79.56 The old cor. of secs. 19, 24, 25, and 30
 I destroy all traces of the old cor.
 and reestablish it at the same point
 as follows.

Set an iron post, 3 ft. long, 3 ins. in
 dia., 24 ins. in the ground for cor.
 of secs. 19 and 30 on the W. bdy. of
 T. 24 S., R. 14 E., with brass cap
 marked



raise a mound of stone, 2 ft.
 base, $1\frac{1}{2}$ ft. high E. of cor.

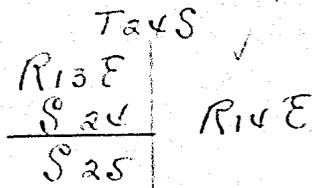
Thence

S. $0^{\circ} 09' W$, with continuous chaining
 80.00 Set an iron post, 3 ft. long, 3 ins. in
 dia., 24 ins. in the ground for cor. of
 secs. 24 and 25 on the E. bdy. of T. 24 S.

Survey and Retacement of the East Boundary of T. 24 S., R. 13 E.

Chains

R. 13 E., with brass cap marked



1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.
 Land, rolling with a general E. drain.

Soil, sandy and gravelly on hard sand and gravel sub-soil; 3rd. rate.

No timber.

Undergrowth, short shadscale
 Good grass for grazing.

S. 0° 09' W., on the E. bdy. of sec. 25.
 Gradually ascend over rolling land sloping N., through short undergrowth of shadscale.

12.00 Base of rock breaks, bears NW. and SE.
 Enter mountainous land, ascend.

18.00 Top of rock breaks, bears NW. and SE.
 Gradually ascend.

27.00 Begin steep ascent, bears E. and W.

31.00 Ridge, 125 ft. above sec. cor., bears E. and W.

Descend 60 ft. to

39.00 Head of hollow, drains E.

39.34 The old 1/4 sec. cor. I destroy all traces of the old cor. and reestablish it at the same point as follows:
 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for 1/4 sec. cor. on the W. bdy. of sec. 30, T. 24 S., R. 14 E., with brass cap marked

Survey and Retracement of the East Boundary of T. 24 S., R. 13 E.

chains

✓
S 30 1/4

1912.

raise a mound of stone, 2 ft. base,
1 1/2 ft. high E. of cor.

Note: On account of natural obstacles,
I am unable to set post in the ground.
Thence

40.00

S. 0° 22' W., with continuous chaining
Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in a mound of stone
and earth, 4 ft. base, 2 ft. high for
1/4 sec. cor. on the E. bdy. of sec. 25,
T. 24 S., R. 13 E., with brass cap
marked

✓
S 25 1/4

1912.

raise a mound of stone, 2 ft. base,
1 1/2 ft. high W. of cor.

Note: On account of natural obstacles
I am unable to set post in the ground.

68.00

Hollow, 30 ft. deep, drains NE.

Gradually ascend

79.40

The old cor. of secs. 25, 30, 31 and 36
I destroy all traces of the old cor.,
and reestablish it at the same point
as follows:

Set an iron post, 3 ft. long, 3 ins. in dia.,
24 ins. in a mound of stone and earth,
4 ft. base, 2 ft. high for cor. of secs. 30
and 31 on the W. bdy. of T. 24 S., R. 14 E.,
with brass cap marked

T 24 S
R 13 E | R 14 E ✓
S 30
S 31

1912

raise a mound of stone, 2 ft. base,

Survey and Retracement of the East Boundary of T. 24 S., R. 13 E.

chains

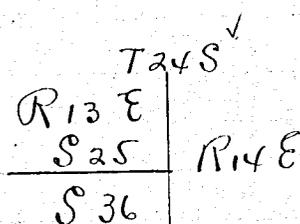
1 1/2 ft. high E. of cor.

Note: On account of natural obstacles I am unable to set post in the ground.

Thence

80.00

S. 0° 08' W., with continuous chaining
Set an iron post, 3 ft. long, 3/8 in. in dia., 24 in. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 25 and 36 on the E. bdy. of T. 24 S., R. 13 E., with brass cap marked.



1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

Land, mountainous and rolling
Soil, gravelly and rocky; 4th rate
Sub-soil, rocks.

No timber.

Undergrowth, short shadscale
Mountainous land on S. 68 chs.

S. 0° 08' W., on E. bdy. of sec. 36.

Over rolling land draining E.,
through short undergrowth of
shadscale.

Gradually ascend.

16.60

Low ridge, bears NE. and SW.
Thence descend over land sloping
and draining S. to Cottonwood
wash.

39.80

The old 1/4 sec. cor. I destroy all
traces of the old cor. and reestablish
it at the same point as follows:
Set an iron post, 3 ft. long, 1 in. in dia.,

Survey and Retracement of the East Boundary of T. 24 S., R. 13 E.

Chemo

24 ins. in the ground for $\frac{1}{4}$ sec. cor. on the W. bdy. of sec. 31, T. 24 S., R. 14 E., with brass cap marked

S 31 $\frac{1}{4}$

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high E. of cor.

theuge

40.00

S. $0^{\circ} 08' W.$, with continuous chaining
Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor. on the E. bdy. of sec. 36, T. 24 S., R. 13 E., with brass cap marked

S 36 $\frac{1}{4}$

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

80.00

The cor. of Ts. 24 and 25 S., Rs. 13 and 14 E.

I destroy all traces of the old cor. and reestablish it at the same point as follows:

Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for cor. of Ts. 24 and 25 S., Rs. 13 and 14 E., with brass cap marked

T 24 S	
R 13 E	R 14 E
S 36	S 31

S 1	S 6
R 13 E	R 14 E

T 25 S

1912

dig pits, 24 x 24 x 12 ins., on each

Resurvey of the South Boundary of T. 24 S., R. 13 E.

Chassis

line, E., W. and N. 4 ft., and S. of post, 8 ft. dist., raise a mound of earth, 5 ft. base, 2 $\frac{1}{2}$ ft. high S. of cor. Land, rolling with a general east drain.

Soil, gravelly; 3rd. rate.

Sub-soil, hard gravel and sand, very dry.

No timber

Undergrowth short shadscale.

Good grass for grazing

August 1, 1912

Resurvey of the South Boundary of T. 24 S., R. 13 E.

Survey commenced August 2, 1912 and executed with a W. & L. E. Gurley solar compass No. 1043. For description and test of instrument see book "A" of this survey.

I know the instrument to be in perfect adjustment by tests made on a Polaris meridian July 30, 1912.

At 8^{h.} 06^{m.} a. m. l. m. t., I set off 38° 41' on the lat. arc; 17° 47' N., on the decl. arc, and determine a meridian with the solar at the cor. of Ts. 24 and 25 S., Rs. 13 and 14 E.

Thence I run

West, resurveying bet. secs. 1 and 36. Over rolling land sloping S., through short undergrowth of shadscale.

16.00 Hollow, 20 ft. dep., drains SE. Gradually ascend

40.00 Set an iron post, 3 ft. long, 1 in. dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor. with brass cap marked

\$ 36^v
 $\frac{1}{4}$

 \$ 1
 1912

Resurvey of the South Boundary of T. 24 S., R. 13 E.

chains.

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high N. of cor.

The old 1/4 sec. cor. which is a cotton-wood stake, bears NE. 60 lks. I destroy old cor.

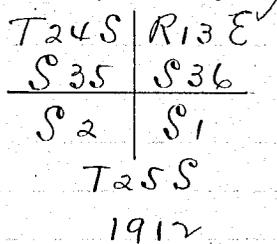
47.00

Low ridge, bears N. and S.

Gradually descend.

80.00

Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for cor. of secs. 1, 2, 35 and 36, with brass cap marked



dig pits, 18 x 18 x 12 ins. in each sec., 5 1/2 ft. dist., raise a mound of earth, 4 ft. base, 2 ft. high W. of cor.

Land, rolling with a general S. drain. Soil, sandy and gravelly on hard sand and gravel sub-soil; 2nd. rate No timber.

Undergrowth, short shadscale.

Good grass for grazing

West, bet. secs. 2 and 35

Over rolling sandy land sloping south, through short undergrowth of shadscale.

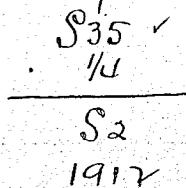
27.00

Wash in hollow, 15 lks. wide, 25 ft. deep, drains S.

Hence over broken land.

40.00

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked



Recovery of the south boundary of T.24 S., R.13 E.

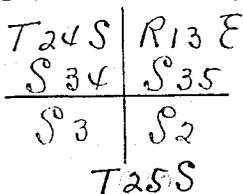
chains

raise a mound of stone, 2 ft. base, 1 1/2 ft. high N. of cor.

67.90 Wash in hollow, 25 lks. wide, 30 ft. deep, drains S.

Gradually ascend

80.00 Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for cor. of secs. 2, 3, 34 and 35 with brass cap marked



1912

dig pits, 18 x 18 x 12 ins., in each sec., 5 1/2 ft. dist., raise a mound of earth, 4 ft. base, 2 ft. high W. of cor. Land, rolling and hilly draining S. Soil, sandy and gravelly; 3rd. rate. Sub-soil, hard gravel and rocks. No timber.

Undergrowth, short shadscale.

Good grass for grazing.

August 2: At this sec. cor., I set off 17° 44' N., on the decl. arc; and at 12^{h.} 06^{m.} p.m. l.m.t., observe the sun on the meridian; the resulting lat. is 38° 41'.

West, bet. secs. 3 and 34.

Over rolling land draining S., through short undergrowth of shadscale.

21.50 Enter hollow, bears N. and S.

Gradually descend 50 ft. to

30.00 Wash in hollow, 15 lks. wide, drains S.

Gradually ascend

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for

Reurvey of the south Boundary of T. 24 S, R. 13 E.

chains

1/4 sec. cor., with brass cap marked

S 34
1/4

S 3

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high N. of cor.

Note; on account of natural obstacles, I am unable to set post in the ground.

53.00 Top of west side of hollow; bears NE. and SW.

80.00 Set an iron post, 3 ft. long, 3/8 in. in dia., 24 ins. in the ground for cor. of secs. 3, 4, 33 and 34 with brass cap marked

T24S	R13E
S33	S34
S4	S3

T25S

1912

dig pits, 18 x 18 x 12 ins., in each sec., 5 1/2 ft. dist., raise a mound of earth, 4 ft. base, 2 ft. high W. of cor. Land, rolling with a general S. drain. Soil, sandy and gravelly; 3rd. rate. Sub soil, hard gravel and rocks. No timber.

Undergrowth, short shadscale.

Good grass for grazing

West, bet. secs. 4 and 33.

Over rolling land draining S., through short undergrowth of shadscale.

25.00 Wash in hollow, 20 lbs. wide, 25 ft. deep drains S.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

Resurvey of the South Boundary of T. 24 S., R. 13 E.

chains

S 33[✓]
1/4

S 4

1912

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist, raise a mound of earth, 3 1/2 ft. base, 1 1/4 ft. high N. of cor.

75.00

Begin descent into Cottonwood Wash, bears NW. and SE.

80.00

Set an iron post, 3 ft. long, 3 in. in dia., 24 ins. in the ground for cor. of secs. 4, 5, 32 and 33 with brass cap marked

T 24 S | R 13 E

S 32 | S 33

S 5 | S 4

T 25 S

1912

dig pits, 18 x 18 x 12 ins., in each sec 5 1/2 ft. dist, raise a mound of earth, 4 ft. base, 2 ft. high W. of cor.

Land, rolling draining S.

Soil, sandy and gravelly; 3rd. rate.

Sub-soil, hard sand and gravel, very dry.

No timber.

Undergrowth, shadscale.

Good grass for grazing

West, bet. secs. 5 and 32.

Gradually descend over rolling sandy land along north side of Cottonwood Wash, through undergrowth of shadscale and greasewood.

25.00

Cottonwood wash in hollow, 1 ch. wide, drains S. 80° E.

Resurvey of the South Boundary of T24S, R.1

chains

Gradually ascend through deep sand.

40.00

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S 32 $\frac{1}{4}$

S 5

1912

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high, N. of cor.

60.00

Top of spur, 50 ft. above wash, projects N.

Descend 30 ft. to

63.00

Wash in hollow, 15 lks. wide, drains NE.

Ascend 30 ft. to

65.00

Top of hollow, bears N. and S. Thence over nearly level sandy land.

80.00

Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for cor. of secs. 5, 6, 31 and 32 with brass cap marked

T24S | R13E \checkmark

S 31 | S 32

S 6 | S 5

T25S

1912

dig pits, 18 x 18 x 12 ins., in each sec., $5\frac{1}{2}$ ft. dist., raise a mound of earth, 4 ft. base, 2 ft. high W. of cor.

Land, rolling with a general E. drain.

Soil, loose sand; 3rd. rate.

Sub-soil, sand and gravel.

No timber.

Resurvey of the south Boundary of T. 24 S., R. 13 E.

chains

Undergrowth short shade scale and greasewood.

Good grass for grazing.

August 2, 1912

August 15: At 8^h. 04^m. a.m. l.m.t., I set off 38° 41' on the lat. arc; 14° 04' N. on the decl. arc; and determine a meridian with the solar at the cor. of secs. 5, 6, 31 and 32

Thence I run

West, bet. secs. 6 and 31.

Over gently rolling land sloping north, through short undergrowth of shade scale.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

S 31'
1/4

S 6
1912

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high N. of cor.

79.41 Allowing for convergency, set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for cor. of T.s. 24 and 25 S., R.s. 12 and 13 E., with brass cap marked

T 24 S
R 12 E | R 13 E

S 36 | S 31

S 1 | S 6
R 12 E | R 13 E

T 25 S
1912

dig pits, 24 x 24 x 12 ins., on each

Resurvey of the south Boundary of T. 24 S., R. 13 E.

chains

line, E., W. and N., 4 ft., and S. of post 8 ft. dist., raise a mound of earth, 5 ft. base, 2 1/2 ft. high S. of cor.

Land, rolling, draining North.
Soil, loose dry sand; 3 rd. rate.
Sub-soil, hard gravel and sand.
No timber.

Undergrowth; short shadscale.
Good grass for grazing

Resurvey of the West Boundary of T. 24 S., R. 13 E.

Survey commenced August 15, 1912 and executed with a W. and L. E. Gurley solar compass No. 1043. For description and test of instrument see book "A" of this survey.

I know the instrument to be in perfect adjustment by recent tests made upon a Polaris meridian. For solar observation see line between secs. 6 and 31, page 24.

From the cor. of Ts. 24 and 25 S., Rs. 12 and 13 E., ~~run~~ I run

North, bet. secs. 31 and 36.

Gradually descend over rolling land sloping N., through short undergrowth of shadscale.

40.00

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

S 36 1/4 S 31

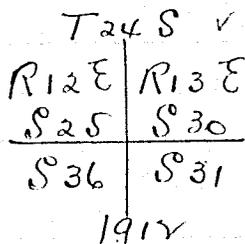
1912

dig pits, 18 x 18 x 12 ins, N. and S. of post, 3 ft. dist., raise a mound of

Accuracy of the West Boundary of T. 24 S., R. 13 E.

chain

- earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high W. of cor.
- 113.50 Cottonwood Wash in hollow, 2 chs. wide, 3 ft. deep, drains S. 80° E. Ascend 50 ft. to
- 57.00 Spur, projects E. Gradually descend
- 30.00 Set an iron post, 3 ft. long, 3 ins. in. dia., 24 ins. in the ground for cor. of secs. 25, 30, 31 and 36, with brass cap marked



dig pits, $18 \times 18 \times 12$ ins., in each sec., $5\frac{1}{2}$ ft. dist., raise a mound of earth, 4 ft. base, 2 ft. high W. of cor.

Land, rolling with a general east drain.

Soil, loose dry sand; 3 rd. rate.

Sub-soil, hard sand and gravel.

No timber.

Undergrowth, short shadscale.

Good grass for grazing purposes.

North, bet. secs. 25 and 30.

Gradually descend over rolling land draining NE., through short undergrowth of shadscale.

- 31.50 Wagon road, from Hanksville, Utah to Grenriver, Utah, bears NE. and SW.

- 36.00 Wash in Iron Spring Gulch, 1 ch. wide, 6 ft. deep, drains NE.

- 11.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

Resurvey of the West Boundary of T. 24 S., R. 13 E.

Drain

S 25 1/4 | S 30 ✓

1912

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., raise a mound of earth, 3 1/4 ft. base, 1 1/4 ft. high W. of cor.

58.00 Hollow, 40 ft. deep, drains E. Gradually ascend.

80.00 Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for cor. of secs. 19, 24, 25 and 30, with brass caps marked

T 24 S ✓	
R 12 E	R 13 E
S 24	S 19
S 25	S 30

1912

dig pits, 18 x 18 x 12 ins., in each sec., 5 1/2 ft. dist., raise a mound of earth, 4 ft. base, 2 ft. high W. of cor.

Land rolling on S. 36.00 chs. with general NE. drain to Iron Spring Gulch. N. 44 chs. hilly land, draining E. to same gulch. Soil, sandy and gravelly; 3rd. rate. Sub-soil, hard sand and gravel. No timber.

Undergrowth, short shadscale.

Good grass for grazing purposes.

August 15: At this sec. cor., I set off 14° 01' N., on the decl. arc; and at 12^h. 04^m. p.m. l.m. t., observe the sun on the meridian; the resulting lat. is 38° 43'

North, bet. secs. 19 and 24. Gradually ascend over mountains

Accuracy of the West Boundary of T. 24 S., R. 13 E.

Chaus

land draining E., through short undergrowth of shade-scale.
 27.00 Spur, 50 ft. high, projects E.
 Thence over broken land along the base of the breaks of the Saw Rafael Reef.

Gradually descend.
 40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked

S 74 $\frac{1}{4}$ S 19

1912

raise a mound of stone, 2 ft. base, $\frac{1}{4}$ ft. high W. of cor.
 Note: On account of natural obstacles, I am unable to set post in the ground.

111.10 Hollow, 40 ft. deep, drains E.

Ascend 30 ft. to
 48.00 Spur, projects E.

Descend 50 ft. to
 70.80 Hollow, drains E.

Ascend 60 ft. to
 78.80 Spur, projects E.

80.00 On edge of rocky breaks of Saw Rafael Reef, bears $N. 15^\circ E.$ and $S. 15^\circ W.$
 Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 13, 18, 19 and 24, with brass cap marked

T 24 S	
R 12 E	R 13 E
S 13	S 18
S 24	S 19

1912

Resurvey of the West Boundary of T. 24 S., R. 13 E.

chauss.

raise a mound of stone, 2 ft. base,
1 1/2 ft. high W. of cor.

Note: On account of natural obstacles,
I am unable to set post in the
ground

Land mountainous with a general
E. drain.

Soil, rocky; 4 th. rate.

Sub-soil, rocky.

No timber.

Undergrowth, short shadscale.

Good grass for grazing purposes.

Mountainous land 80.00 chs.

West Boundary of T. 24 S., R. 13 E.

Survey commenced August 15, 1912.

For solar observation, see line bet. secs.

6 and 31, page 24.

From the cor. of secs. 13, 18, 19 and 24

I run

North, bet. secs. 13 and 18.

Over mountainous land along E.
slope of the breaks of the San Rafael
Reef.

1.00 Top of perpendicular sandstone ledge
and S. side of box canyon, bears
E. and W.

Descend abruptly.

2.50 Wash in canyon, 20 lbs. wide, 100 ft.
below sec. cor., drains S. 80° E.

Note: Several large water pockets
in solid sandstone up wash about
4 chs.

Ascend abruptly over solid sandstone

19.00 Spur, 125 ft. above canyon, projects
E.

Thence over broken land facing E.

29.00 Hollow, 50 ft. deep, drains E.

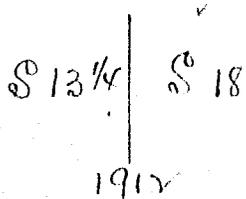
Ascend 40 ft. to

33.80 Spur, projects E.

West Boundary of T. 24 S., R. 13 E.

Chain

- 35.00 Ascend 60 ft. to Hollow, drains E.
- 38.80 Ascend 50 ft. to Spur projects E.
- 40.00 Descend 20 ft. to Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 1 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked



raise a mound of stone, 2 ft. base, $1\frac{1}{4}$ ft. high W. of cor.
 Note: On account of natural obstacles, I am unable to set post in the ground.

August 15, 1912.

August 16: at 8^h 00^m. a.m. l.m.t., I set off $38^{\circ} 44'$ on the lat. arc; $13^{\circ} 45'$ N., on the decl. arc; and determine a meridian with the solar at this $\frac{1}{4}$ sec. cor.

Thence I run North.

- 41.10 Hollow, 30 ft. deep, drains E.
- 44.30 Ascend. 50 ft. to Ridge, bears E. and W. Begin descent over rock breaks facing NW.
- 64.00 Top of south side of box canyon, bears E. and W.
- 67.00 Descend abruptly over ledges 100 ft. to Wash in canyon, 25 lbs. wide, drains W.
 Note: Canyon heads about 15 chs. E.
 Ascend abruptly over ledges

West Boundary of T. 24 S., R. 13 E.

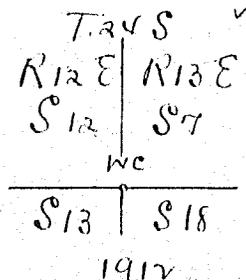
chain

- 71.60 Top of solid sandstone spur, 100 ft. above canyon, projects W. 5 chs. Descend abruptly over ledges 100 ft. to
- 77.00 Wash in canyon, 50 lbs. wide, drains E. Ascend abruptly over solid sandstone.
- 80.00 Point for cor. of secs. 7, 12, 13 and 18 falls on steep W. slope of solid sandstone pinnacle 50 ft. high. Impossible to set cor. at this point. Land, rough mountainous. Soil, solid sandstone bed rock; 4th rate. No timber. No Undergrowth. Mountainous land 80.00 chs.

North, bet. secs. 7 and 12.

Over rough mountainous land across solid sandstone bed rock. Ascend along E. side of high sandstone ridge.

- 1-15 Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in a mound of stone, 4 ft. base, 2 ft. high for witness cor. to secs. 7, 12, 13 and 18, with brass cap marked



raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

- 18.50 Top of solid sandstone ridge, 150 ft. above canyon, bears N.E. and S.W.

West Boundary of T. 24 S., R. 13 E.

chain

Thence descend over rocky land facing NW., through scattering scrub cedar and piñon timber.

39.50 Top of ledge, 25 ft. high, bears NE. and SW.

Descend

40.00 On solid sandstone ledge. Impossible to set $\frac{1}{4}$ sec. cor. at this point.

41.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for witness cor. to the $\frac{1}{4}$ sec. cor., with brass cap marked.

T 24 S ✓	
R 12 E	R 13 E
S 12	S 7
nc $\frac{1}{4}$.	
1917.	

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground. Continue to descend.

46.00 Hollow, 150 ft. deep, drains NE. Ascend 50 ft. to.

51.00 Spur, projects E.

Descend 75 ft. to

63.00 Hollow, drains E.

Thence ascend over rocky land over huge boulders, 125 ft. to

80.00 Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 1, 6, 7 and 12 with brass cap marked

T 24 S ✓	
R 12 E	R 13 E
S 1	S 6
S 12	S 7
1917.	

West Boundary of T. 24 S., R. 13 E.

chains.

raise a mound of stone, 2 ft. base,
 $1\frac{1}{4}$ ft. high W. of cor.

Note: On account of natural obstacles,
I am unable to set post in the ground.
Land, rough mountainous with a
general N.E. drain.

Soil, rocky; 4-th. rate.

Timber, scrub cedar and piñon
on N. 61.50 chs.

No undergrowth.

Land mountainous or heavily timbered
80.00 chs.

August 16: At this sec. cor. I set off
 $13^{\circ} 42' N.$, on the decl. arc; and at
 $12^{\text{h}} 04^{\text{m}}$ p. m. l. m. t., observe the
sun on the meridian; the result-
ing lat. is $38^{\circ} 45'$.

North, bet. secs. 1 and 6.

Over rough mountainous land
facing E., through scattering
scrub cedar and piñon timber.

Ascend across solid sandstone bed-
rock and huge boulders.

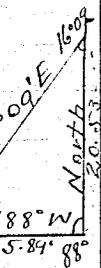
22.60

Top of perpendicular sandstone
ledge 400 ft. high and south side
of box canyon, 500 ft. deep, bears
E. and W.

To determine distance across canyon
I set a flag on line on top of ridge
on N. side of canyon, then measure
a base line N. $88^{\circ} W.$, 5.89 chs. (this
is the longest base line I am able to
secure in any direction and be able
to see my flag), to a point from
which the flag bears N. $16^{\circ} 09' E.$,
from the flag the west end of the
base bears S. $16^{\circ} 09' E.$ By separate
measurement of each angle they are
found to be respectively, 88° , $75^{\circ} 51'$,

West Boundary of T. 24 S., R. 13 E.

chains



and $16^{\circ} 09'$. I therefore compute the distance across canyon as follows.

$$\log 5.89 \text{ chs} = 1.770115 \checkmark$$

$$\log \sin 75^{\circ} 51' = 9.986619 - 10$$

$$\text{Colog} \sin 16^{\circ} 09' = 0.555716 \checkmark$$

$$\log 11.312450 = 10 =$$

$$20.53 \text{ chs.} + 22.60 \text{ chs.} = 43.13 \text{ chs.}$$

to top of ridge on N. side of canyon bears E. and W.

40.00 I now measure South 3.13 chs to edge of Box canyon bears E. and W.

Set an iron post, 3 ft. long, 1 in. dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked

S $1\frac{1}{4}$ | S 6

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

Ascend 50 ft. to

43.13 Top of ridge and point of triangulation, 600 ft. above canyon, bears E. and W. Descend.

44.00 Top of perpendicular sandstone ledge and S. side of box canyon about 500 ft. deep across which I cannot chain. I am unable to secure a base line at this point to triangulate across canyon, and after a diligent attempt am unable to cross canyon. I erect a high signal at this point.

August 16, 1912.

August 23: At 9^h 33^m a.m. l.m.t., I set off $38^{\circ} 46'$ on the lat. arc; $11^{\circ} 26'$ N. on the decl. arc; and determine

West Boundary of T. 24 S., R. 13 E.

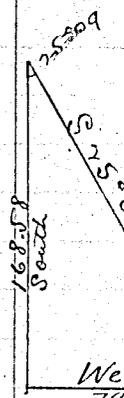
chauss.

a meridian with the solar at a point on top of a high ridge near the point for cor. of Ts. 23 and 24 S., Rs. 12 and 13 E. From this point the witness cor. to secs. 7, 12, 13 and 18; the witness cor. to the $\frac{1}{4}$ sec. cor. bet. secs. 13 and 18; the cor. of secs. 1, 6, 7 and 12 and my flag at 44.04 chs. N. of the cor. of secs. 1, 6, 7 and 12, bears South. Being unable to measure the N. $\frac{1}{2}$ bet. secs. 1 and 6 on account of two inaccessible box canyons and many high sandstone pinnacles, I triangulate as follows: The distance between the cor. of secs. 7, 8, 17 and 18 on a line due West to the tp. bdy. is 79.15 chs. My intersection of this line with the tp. bdy. is 10 lks. S. of the true cor. point of secs. 7, 12, 13 and 18. From my station on top of ridge the cor. of secs. 7, 8, 17 and 18, bears S. $25^{\circ}09'$ E., therefore $\cotan. 75^{\circ}09' \times$ base or $2.12993 \times 79.15 = 168.58$ chs. $\div 10$ lks = 168.58 chs. from true cor. point of secs. 7, 12, 13 and 18 or north of cor. of secs. 1, 6, 7 and 12. To top of a high point of the breaks of the Saw Rafael Reef, 2000 ft. above Iron Spring Gulch, bears E. and N. 10° W.

88.48

89.58

Thence over rocky land facing E. A distance equal to the length of the East boundary of the tp. Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of T.S. 23 and 24 S., Rs. 12 and 13 E., with brass cap marked



West Boundary of T. 24 S., R. 13 E.

Chas. W.

T. 23 S	
R 12 E	R 13 E
S 36	S 31
S 1	S 6
R 12 E	R 13 E
T 24 S	

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high S. of cor.

Note: On account of natural obstacles I am unable to set post in the ground.

Land, mountainous draining E. near the summit of the Breaks of the San Rafael Reef.

Soil, rocks; 4 th. rate.

Some cedar and piñon timber. No undergrowth.

Land mountainous, heavily timbered and exceptionally difficult to survey 89.58 chs.

August: 23: At this tp. cor. I set off $11^{\circ} 25' N.$, on the decl. arc; and at $12^{\text{h}} 03^{\text{m}}$ p.m. - 1. m. t., observe the sun on the meridian; the resulting lat is $39^{\circ} 06'$.

In P.m. I make an attempt to run a random line bet. secs. 6 and 31 on the N. bdy. of T. 24 S., R. 13 E. but fail after running 11.90 chs. on account of many inaccessible cliffs, high sandstone pinnacles and deep impassible box canyons.

August 23, 1912

Resurvey of the north boundary of T. 24 S., R. 13 E.

chains.

Survey commenced August 5, 1912 and executed with a W. and L. E. Gurley solar compass No. 1043. For description and test of instrument see book "A" of this survey.

I know my instrument to be in perfect adjustment by recent tests made on Polaris.

I begin at the cor. of Ts. 23 and 24 S., Rs. 13 and 14 E., heretofore described. At 7^h. 06^m. a. m. l. m. t., I set off 38° 46' on the lat. arc. 17° 01' 71, on the decl. arc, and determine a meridian at the above named cor. Thence I run

West, on a random line along the north boundary of the tp., setting temporary 1/4 sec. and sec. cors. at intervals of 400 chs. At 320.00 chs., I am unable to continue my line any further west on account of the high breaks of the San Rafael Reef, which consist of impassible cliffs, high pinnacles and deep box canyons.

I therefore resurvey this fractional tp. body as follows:

The true cor. point of secs. 4, 5, 32 and 33 falls on steep slope of solid sandstone bed rock where cor. cannot be set, I therefore run East, counting distances from true cor. point. bet. secs. 4 and 33 over rough mountainous land in Breaks of the San Rafael Reef.

Resurvey.

0.10

Set an iron post, 3 ft. long, 3 ins. in dia., 2 1/2 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for witness cor. to secs. 4, 5

Recovery of the north boundary of T.24 S., R.13 E.

Chains

32 and 33. with brass cap marked

T23S	R13E
S32	S33
S5	S4

T24 S

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

- 6.00 Hollow, 50 ft. deep, drains S.
Ascend 100 ft. to
- 10.00 Solid sandstone spur, projects S.
Descend abruptly 75 ft. to
- 12.50 Hollow, drains S.
Ascend abruptly 75 ft. over ledges to
- 15.00 Top of hollow and leave breaks of the San Rafael Reef, bears N. and S.
Gradually ascend
- 21.00 Spur, projects SE.
Descend 50 ft. to
- 25.00 Hollow, drains SE.
Ascend 50 ft. to
- 32.00 Spur, projects SE.
Gradually descend
- 40.00 Set an iron post, 3 ft. long, 1 in. in diam., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked.

S 33 1/4

S 4

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high, N. of cor.

No trace of the old 1/4 sec. cor. can be found.

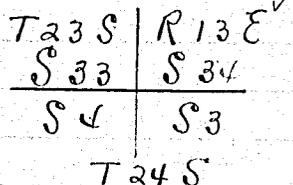
- 57.00 Wash in hollow, 25 lbs. wide, 100 ft. below 1/4 sec. cor., drains NE.

Reurvey of the north Boundary of T. 24 S., R. 13 E.

chauss

75.50 Ascend 100 ft. to Ridge, bears NE. and SW.

8000 Descend 40 ft. to Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 3, 4, 33 and 34 with brass cap marked



1912

raise a mound of stone, 2 ft. base, 1 1/4 ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground. Land, mountainous with a general NE. drain.

Soil, gravelly and rocky; 4 th. rate. No timber

Undergrowth, some short shade-scale. Mountainous land 80.00 chs.

August, 5: At this sec. cor., I set off $16^{\circ} 57' N.$, on the decl. arc; and at 12^{h.} 06^{m.} p.m. l.m. t., observe the sun on the meridian; the resulting lat. is $38^{\circ} 46'$

East; bet. secs. 3 and 34, Over mountainous land draining NE., through short undergrowth of shade-scale.

Descend abruptly into Iron Spring Gulch.

4.00 Wash in gulch, 2 chs. wide, 60 ft. below sec. cor., course at bend from S. to NE.

8.10 Ascend abruptly 75 ft. to Top of east side of gulch, bears NE.

Resurvey of the north Boundary of T. 24 S., R. 13 E.

Chains

and S.

Thence over land facing nearly N.
Gradually descend

31.00 Hollow, 30 ft. deep, drains N.

Ascend 40 ft. to

33.00 Low ridge, bears N. and S.

Thence gradually descend over land
facing E.

40.00 Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in a mound of stone
and earth, 4 ft. base, 2 ft. high
for $\frac{1}{4}$ sec. cor., with brass cap
marked

S 34
 $\frac{1}{4}$

S 3

1912

raise a mound of stone, 2 ft. base,
 $\frac{1}{4}$ ft. high N. of cor.

Note: On account of natural
obstacles, I am unable to set post in
the ground.

46.10 Wagon road from Hawksville, Utah
to Greerivers, Utah, bears NE. and
SW.

59.00 Wash in hollow, 40 lks. wide, 50
ft. below ridge, drains NE.

Ascend 60 ft. to

76.00 Enter rolling land, bears NW. and
S.

80.00 Set an iron post, 3 ft. long, 3 ins.
in dia., 24 ins. in the ground for
cor. of secs. 2, 3, 34 and 35, with
brass cap marked

T 23 S | R 13 E

S 34 | S 35

S 3 | S 2

T 24 S

1912

dig pits, 18 x 18 x 12 ins., in each sec.,

Resurvey of the north Boundary of T. 24 S., R. 13 E.

Chains.

5 1/2 ft. dist., raise a mound of earth, 4 ft. base, 2 ft. high W. of cor.
 Land, mountainous and rolling.
 W. 76 chs., mountainous land; E. 4 chs. rolling land.
 Soil, gravelly and rocky; 4 th. rate.
 Sub. soil, rocky and hard gravel.
 No timber.
 Undergrowth, short shade-scale.
 Some good grass for grazing.
 Mountainous land 76.00 chs.

East, bet. secs. 2 and 35.
 Over rolling land draining N., through short undergrowth of shade-scale.

27.50 Wash, 20 lks. wide, 10 ft. deep, drains NE.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

S 35 ✓
 1/4

S 2

1912

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high N. of cor.

56.00 Wash, 20 lks. wide, 5 ft. deep, drains NE.

80.00 Set an iron post, 3 ft. long, 3 ins. in dia., 24 ins. in the ground for cor. of secs. 1, 2, 35 and 36, with brass cap marked

T 23 S	R 13 E
S 35	S 36
S 2	S 1

T 24 S

1912

Recovery of the north Boundary of T. 24 S., R. 13 E.

Chains:

dig pits, $18 \times 18 \times 17$ ins., in each sec.,
 $5\frac{1}{2}$ ft. dist, raise a mound of earth,
 4 ft. base, 2 ft. high W. of cor.
 Land, rolling, draining N.
 Soil, sandy, gravelly and gypsum;
 3rd. rate.
 Sub-soil gypsum.
 No timber.
 Undergrowth, short shadescale.
 Good grass for grazing.

East, bet. secs. 1 and 36.

Over rolling land, draining N.,
 through short undergrowth of
 shadescale

37.00 Wash, 50 lbs. wide, 5 ft. deep,
 drains N.

40.00 Set an iron post, 3 ft. long, 1 in. in
 dia., 24 ins. in the ground for $\frac{1}{4}$
 sec. cor., with brass cap marked

S 36
 $\frac{1}{4}$

 S 1
 1912

dig pits, $18 \times 18 \times 12$ ins., E. and W.
 of post, 3 ft. dist, raise a mound
 of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N.
 of cor.

75.00 Hollow, drains N.

Leave rolling land, enter mount-
 ainous land, bears N.E. and S.W.
 Ascend 75 ft. to

80.00 The cor. of T's. 23 and 24 S., R's. 13 and
 14 E.

Land, rolling and mountainous
 with a general N. drain.

Soil, sandy and rocky; 3rd and
 4th. rate.

Sub-soil. hard gravel and rocks.
 No timber.

Resurvey of the North Boundary of T. 24 S., R. 13 E.

Chains.

Undergrowth, short shadscale.
Good grass for grazing.
Mountainous land on E. 5 chs.

August 5, 1912

August 24: I make another attempt to resurvey line bet. secs. 5 and 32 and 6 and 31, but fail.

August 24, 1912

Boundaries of T. 24 S., R. 13 E.

Lines Designated	Bearings	Distances	Part of Lines		Departures	
			N.	S.	E.	W.
West Bdy T24 S., R13 E						
W. Bdy Sec. 36, S $\frac{1}{2}$	N. 91° 08' E.	40.20	40.20		.09	
" " " 36, N $\frac{1}{2}$	N. 0° 08' E.	40.40	40.40		.09	
W. Bdy sec. 30, S $\frac{1}{2}$	N. 0° 22' E.	40.06	40.06		.26	
" " " " N $\frac{1}{2}$	N. 0° 09' E.	39.78	39.78		.10	
W. Bdy sec. 19, S $\frac{1}{2}$	N. 0° 11' W	41.77	41.77			.13
" " " " N $\frac{1}{2}$	N. 0° 36' E.	38.79	38.79		.41	
" " " " 18, S $\frac{1}{2}$	N. 0° 22' E.	40.44	40.44		.26	
" " " " " N $\frac{1}{2}$	N. 0° 10' E.	40.30	40.30		.12	
" " " " " 7, S $\frac{1}{2}$	N. 0° 27' E.	40.29	40.29		.32	
" " " " " 7, N $\frac{1}{2}$	N. 0° 14' E.	40.28	40.28		.16	
" " " " " 6	N. 1° 52' E.	87.27	87.24		2.84	
N. Bdy T24 S., R13 E	West	324.35				324.35
W. Bdy sec. 4	S. 0° 02' E.	89.95		89.95	.05	
N. Bdy sec. 8	S 89° 56' W	79.94		.09		79.94
N. Bdy sec. 7	N. 89° 58' W	79.09	.05			79.09
W. Bdy T24 S., R13 E	South	400.00		400.00		
S. Bdy " "	East	479.41			479.41	
Convergence						.52
			489.60	490.04	484.12	484.03
				489.60	484.03	

Error in lat. = .44

Error in dep = .08

For General description see Book "A" of this survey.

Howard Miller
U. S. Surveyor.

Blank

Page

Chains

Survey commenced Aug. 25, 1912, and executed with a W. and L. E. Gurley solar compass No. 1043.

For description and test of instrument see book A. of this survey.

I begin at the cor. of Tps. 23 and 24 S., Rs. 13 and 14 E., in lat. $38^{\circ} 46' 02''$ N., and long. $110^{\circ} 27' 19''$ W.

At this cor. I set off $38^{\circ} 46'$ N. on the lat. arc, and $10^{\circ} 40'$ N. on the decl. arc and at 4h 32m p.m., l.m.t., determine a meridian with the solar and mark a point in the line thus determined on a stone firmly set in the ground 5.00 chs. N. of this cor.

At 9h 17m p.m., l.m.t., I observe Polaris at eastern elongation in accordance with the Manual of Surveying instructions and mark a point in the line thereof on a peg driven firmly in the ground 5.00 chs. N. of my station.

Aug. 25, 1912.

August 26; At 7h 32m a.m., I lay off the azimuth of Polaris $1^{\circ} 30'$ to the West and note that my Polaris meridian agrees with the solar meridian of August 25.

At 8h 02m a.m., l.m.t., I set off $38^{\circ} 46'$ N. on the lat. arc; $10^{\circ} 26'$ N. on the decl. arc; and determine a meridian with the solar. This meridian also agrees with the Polaris meridian and solar meridian of August 25. I therefore know the instrument to be in perfect adjustment.

Magn. decl. at 8h 15m = $15^{\circ} 45'$ E.

Thence I run

North, retracing bet. secs. 31 and 36.

Descend over rough mountainous land, falling N., across solid sandstone bedrock.

5.00 Leave mountainous land, 60 ft. below sec. cor., bears NE. and SW.

Thence over deep sandy rolling land, sloping gently N., through undergrowth of shadscale and greasewood.

35.00 Hollow, 100 ft. below Tp. cor., drains NW.

Chains

- Gradually ascend over gentle S. slope.
- 40.00 Intersect old $\frac{1}{4}$ sec. cor., which is a gray sandstone
 16 x 8 x 4 ins., with marks nearly obliterated and accessor
 to corner destroyed. I destroy all traces of old cor.,
 and re-establish it at the same point as follows;
 Set an iron post, 3 ft. long, 1 in. in diam., 24 ins. in
 the ground, with brass cap, mkd.
- S 36: $\frac{1}{2}$ | S 31
 1912 : dig pits, 18 x 18
- x 12 ins., N. and S. of post, 3 ft. dist., and raise a
 mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high; W. of cor.
 True bearing = North. Dist. = 40.09
- From $\frac{1}{4}$ sec. cor. I continue North.
- 40.00 No trace of cor. of secs. 25, 30, 31 and 36 can be found.
 I continue my line N., and at 80.00 chs. intersect the
 $\frac{1}{4}$ sec. cor. bet. secs. 25 and 30, which is a gray sandstone
 24 x 9 x 3 ins., and marked and witnessed as described
 by the Surveyor General.
- I return to $\frac{1}{4}$ sec. cor. bet. secs. 31 and 36.
 Thence I run
 North, re-surveying bet. secs. 31 and 36.
 Over rolling mountainous land, through short undergrowth
 of shadscale and greasewood.
 Ascend S. face of rocky ridge.
- 24.30 Top of rocky ridge, 100 ft. above $\frac{1}{4}$ sec. cor., bears W.
 2 chs., and E.
- Descend abruptly over N. slope of ridge.
- 36.00 150 ft. below ridge. The point for cor. of secs. 25, 30,
 31 and 36 will fall in Iron Springs Wash, where the corner
 will be washed away. I therefore perpetuate corner at this
 point as follows:
 Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins. in
 the ground, for witness cor. to secs. 25, 30, 31 and 36,
 with brass cap, mkd.

Chains

R 13 E		R 14 E	
S 25	S 30	S 25	S 30

WC	
S 36	S 31

1912; raise a mound of stone,

2 ft. base, 1 $\frac{1}{2}$ ft. high, W. of cor.

36.40 Right bank of Iron Springs Wash, course NE.

Thence across channel of wash.

40.00 Point for cor. of secs. 25, 30, 31 and 36 in wash.

No corner set.

Land, rolling and rough mountainous land, with N. and S. slopes, draining NW. into Iron Springs Wash.

Surface, some rocky on S. 5 chs., and N. 40.00 chs.

Soil, on rolling part, deep, loose, dry sand and gravel, on hard, dry, baked clay subsoil, very fertile if watered.

Soil, on mountainous part, rocky and clay of no value.

Undergrowth, short shadscale and greasewood. No timber.

Good grass for grazing on mile.

Mountainous land, 45.00 chs.

North, re-surveying bet. secs. 25 and 30.

Over level channel of Iron Springs Wash.

2.00 Left bank of wash, course NE.

Thence ascend over deep shifting sand, falling S., through scattering shadscale and greasewood undergrowth.

27.00 Top of sandy ledge, 60 ft. high, bears E. and W.

Desc. 25 ft. to

34.00 Small hollow, drains E.

Gradually ascend.

40.00 The $\frac{1}{4}$ sec. cor. I destroy all traces of old cor. and re-establish it at the same point as follows:

Set an iron post, 3 ft. long, 1 in. in diam., 24 ins. in the ground, for re-established $\frac{1}{4}$ sec. cor., with brass cap, mkd.

S 25	$\frac{1}{4}$	S 30
1912		

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft.

Chains

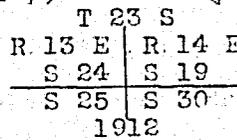
dist., and raise a mound of earth, 3½ ft. base, 1½ ft. high, W. of cor.

From ½ sec. cor. I continue retracing North.

Continue gradual ascent over rolling sandy land.

40.00 Intersect the cor. of secs. 19, 24, 25 and 30, which is a sandstone, 18 x 8 x 4 ins. above ground, firmly set and marked and witnessed as described by the Surveyor General. I destroy all traces of the old cor., and re-establish it at the same point as follows:

Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins. in the ground, for re-established cor. of secs. 19, 24, 25 and 30, with brass cap, mkd.



dig pits, 18 x 18 x 12 ins. each sec., 5½ ft. dist., and raise a mound of earth, 4 ft. base, 2 ft. high, W. of cor.

Land, rolling and sandy, with a general SE. exposure.

Soil, light, dry, fine sand and some gravel, very fertile if watered. Subsoil, hard, dry sand and clay.

No timber:

Undergrowth, short shadscale and greasewood.

Good grass for grazing.

North, retracing bet. secs. 19 and 24.

Gradually ascend over rolling sandy land through short undergrowth of shadscale.

24.00 Enter sandstone bedrock and rocky land, bears E. and W. Ascend.

35.00 Top of sandstone spur, projects W.

Thence over land falling nearly W.

40.00 Fall 21 lks. E. of evident remains of the old ½ sec. cor., which is a dilapidated mound of stone, but none marked.

I destroy all traces of old ½ sec. cor., and re-establish it at the same point as follows:

Set an iron post, 3 ft. long, 1 in. in diam., 24 ins. in

Chains

a mound of stone, 4 ft. base, 2 ft. high, for re-established $\frac{1}{4}$ sec. cor., with brass cap, mkd.

S 24 $\frac{1}{4}$ '	S 19
1912	

raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high, W. of cor.

Note: On account of natural obstacles I am unable to set post in the ground.

The true bearing of this $\frac{1}{2}$ mile is N. $0^{\circ} 18'$ W., and distance is 40.09 chs.

From the $\frac{1}{4}$ sec. cor. I continue North.

2.00 Leave sandstone bedrock, bears E. and W.

Thence over sandy land.

25.80 Low ridge, bears E. and W.

Descend over land falling W.

40.05 50 ft. below ridge.

Fall 3 lks. E. of the cor. of secs. 13, 18, 19 and 24, which is a sandstone, 20 x 10 x 4 ins., above ground, firmly set, and marked and witnessed as described by the Surveyor General.

I destroy all traces of the old cor., and re-establish it at the same point as follows:

Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins. in the ground, for re-established cor. of secs. 13, 18, 19 and 24, with brass cap, mkd.

T 23 S	
R 13 E	R 14 E
S 13	S 18
S 24	S 19
1912	

dig pits, 16 x 18 x 12 ins., in each sec., 5 $\frac{1}{2}$ ft. dist., and raise a mound of earth, 4 ft. base, 2 ft. high, W. of cor.

The true bearing of this $\frac{1}{2}$ mile is N. $0^{\circ} 05'$ W., and the distance is 40.05 chs.

Land, rolling hills with general S. and N. exposures.

Soil, loose, dry, fine sand and gravel, 2 to 3 ft. deep, of good quality, and solid bedrock.

No timber.

Chains

Undergrowth, short shadscale and greasewood.

Good grass for grazing on mile.

August 26, 1912: At this sec. cor. I set off $10^{\circ} 22'$ N. on the decl. arc, and at 12h 02m p.m., l.m.t., observe the sun on the meridian. The resulting lat. is $38^{\circ} 48'$ N.

North, retracing bet. secs. 13 and 18.

Over rolling sandy land sloping N., through short undergrowth of shadscale and greasewood.

Gradually descend.

40.00 Intersect the old $\frac{1}{4}$ sec. cor., which is a greatly decayed cottonwood stake, with marks nearly obliterated.

I destroy all traces of the old cor. and re-establish it at the same point as follows:

Set an iron post, 3 ft. long, 1 in. in diam., 24 ins. in the ground, for re-established $\frac{1}{4}$ sec. cor., with brass cap, mkd.

S 13 $\frac{1}{4}$ | S 18

1912

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., and raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high, W. of cor.

The true bearing of this $\frac{1}{2}$ mile is North, and the distance is 40.00 chs.

August 26, 1912.

August 27, 1912: At 8h 02m a.m., l.m.t., I set off $38^{\circ} 49'$ N. on the lat. arc, and $10^{\circ} 05'$ N. on the decl. arc, and determine a meridian with the solar at this $\frac{1}{4}$ sec. cor. Thence I run

North, retracing N. $\frac{1}{2}$ mile bet. secs. 13 and 18.

At 40.00 chs. I find no trace of the old cor. of secs. 7, 12, 13 and 18. I therefore continue my line North and at 120.57 chs., fall 9 lks. E. of the cor. of secs. 1, 6, 7 and 12, which is a sandstone, 24 x 15 x 8 ins., above ground, firmly set and marked and witnessed as described by the Surveyor General.

Chains

I now return to the $\frac{1}{4}$ sec. cor. bet. secs. 13 and 18.

Thence I run

N. $0^{\circ} 03'$ W., re-surveying bet. secs. 13 and 18.

Gradually ascend over gently rolling sandy bench, through short undergrowth of shadscale and short greasewood.

40.19 By proportionate measurement.

Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins. in the ground, for re-established cor. of secs. 7, 12, 13 and 18, with brass cap, mkd.

T 23 S.	
R 13 E	R 14 E
S 12	S 7
S 13	S 18
1912	

dig pits, 18 x 18 x 12 ins., in each sec., 5 $\frac{1}{2}$ ft. dist., and raise a mound of earth, 4 ft. base, 2 ft. high, W. of cor.

Land, rolling, with general E. exposure.

Soil, light, fine, dry sand, 2 to 4 ft. deep, of very good quality.

Undergrowth, shorth shadscale and greasewood.

No timber.

Good grass for grazing on mile.

N. $0^{\circ} 03'$ W., re-surveying bet. secs. 7 and 12.

Gradually descend over rolling, sandy bench land, through short undergrowth of shadscale and greasewood.

58.20 Leave rolling, sandy bench land, bears NE. and SW.

Descend over rocky land, facing NW.

40.19 By proportionate measurement

Set an iron post, 3 ft. long, 1 in. in diam., 24 ins. in a mound of stone, 4 ft. base, 2 ft. high, for re-established $\frac{1}{4}$ sec. cor., with brass cap, mkd.

S 12 $\frac{1}{4}$	S 7
--------------------	-----

1912

raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high, W. of cor.

Note: On account of natural obstacles, I am unable to

Chains

set post in the ground.

51.00 Hollow, 60 ft. deep, course NE.
Gradually ascend.

55.05 Wagon road, from Hanksville, Utah to Greenriver, Utah,
bears NE. and SW.

60.00 Sandstone spur, 30 ft. high, projects SE. Descend.

71.00 Hollow, 30 ft. deep, drains SE.
Ascend.

75.00 East point of sandstone spur.
Gradually descend.

80.38 The cor. of secs. 1, 6, 7 and 12.
I destroy all traces of the old cor., and re-establish
it at the same point as follows:
Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins. in
a mound of stone and earth, 4 ft. base, 2 ft. high, for
re-established cor. of secs. 1, 6, 7 and 12, with brass
cap, mkd.

	T 23, S	
R 13 E	|	R 14 E
S 1	|	S 6
S 12	|	S 7
1912		

raise a mound of stone, 2 ft. base, 1½ ft. high, W. of cor.
Note: On account of natural obstacles I am unable to set
post in the ground.

Rolling bench land on S. 38.20 chs., and broken mountainous
land, with general E. exposure on N. 42.18 chs.
Soil, on bench land, loose, fine, dry, sand, 2 to 4 ft.
deep. Soil of remaining part, rocky and disintegrated
sandstone, very shallow.
No timber.
Undergrowth, short shadscale and greasewood.
Good grass for grazing on mile.

North, retracing bet. secs. 1 and 6.
Over broken rocky and sandy land, draining E. Undergrowth,
some short shadscale.

1.00 Enter solid sandstone bedrock, bears E. and W.

Chains

- 21.50 Hollow, 35 ft. deep, drains E.
Ascend.
- 23.00 Leave bedrock, bears E. and W.
- 37.50 Ridge, 60 ft. high, bears E. and W.
Descend.
- 39.00 Hollow, 25 ft. deep, drains E.
Ascend.
- 40.03 Fall $\frac{1}{2}$ lks. W. of the $\frac{1}{4}$ sec. cor., which is a sandstone, 16 x 16 x 10 ins., above ground, firmly set and marked and witnessed as described by the Surveyor General.
I destroy all traces of old cor., and re-establish it at the same point as follows:
Set an iron post, 3 ft. long, 1 in. in diam., 24 ins. in a mound of stone, 4 ft. base, 2 ft. high, for re-established $\frac{1}{4}$ sec. cor., with brass cap, mkd.
- | | |
|-------------------|-----|
| S 1 $\frac{1}{4}$ | S 6 |
| 1912 | |
- raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high, W. of cor.
Note: On account of natural obstacles I am unable to set post in the ground.
The true bearing of this $\frac{1}{2}$ mile is N. 0° 02' E., and the distance is 40.03 chs.
From $\frac{1}{4}$ sec. cor. I continue North.
Ascend abruptly 50 ft. to
- 41.70 Spur, projects E.: Descend.
- 46.00 Hollow, 50 ft. deep, course E.
Ascend gradually.
- 50.40 Low ridge, bears E. and W.
Thence gradually descend towards large wash, through high greasewood undergrowth.
- 39.06 Fall 22 lks. E. of the cor. of Tps. 22 and 23 S., Rs. 13 and 14 E., which is a sandstone, 16 x 10 x 8 ins., above ground, firmly set and marked and witnessed as described by the Surveyor General.
I destroy all traces of the old cor., and re-establish it at the same point as follows:

Chains

Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins. in a mound of stone, 4 ft. base, 2 ft. high, for re-established cor. of Tps. 22 and 23 S., Rs. 13 and 14 E., with brass cap, mkd.

T 22 S S	
R 15 E	R 14 E
S 36	S 31
S 1	S 6
R 13 E	R 14 E
T 23 S S	
1912	

raise a mound of stone, 2 ft. base, 1½ ft. high, S. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

The true bearing of this line is N. 0° 18' W., and the distance is 39.06 chs.

Land, broken mountainous, with a general E. exposure.

Soil, broken bedrock and disintegrated sandstone, very shallow; some good, rich, sandy loam soil, 2 to 3 ft. deep, on N. 15 chs.

Undergrowth, short shadscale and greasewood.

No timber.

Some grazing throughout mile.

Mountainous land, 79.09 chs.

August 27, 1912: At this cor. I set off 10° 01' N. on the decl. arc, and at 12h 01m p.m., l.m.t.; observe the sun on the meridian. The resulting lat. is 38° 51' N.

Howard W. Miller

U. S. Surveyor.

Chains

Lines run by Howard W. Miller, U. S. Surveyor.

Aug. 26, 1912:

I commence at the cor. of Tps. 23 and 24 S., Rs. 12 and 13 E., heretofore described, and run

N. on range line bet. Rs. 12 and 13 E., through Tp. 23 S., bet. secs. 31 and 36.

Over broken, rocky, mountainous land, draining SE.

Ascend over broken land.

25.80 Top of precipitous cliff, top of San Rafael Reef, bears NE. and SW.

25.83 Set flag to be used in triangulation.

Howard W. Miller
U. S. Surveyor.

Lines run by R. E. Clark, U. S. T.

I commence at flag at 25.83 as set by H. W. Miller, U.S.S.

Sept. 16, 1912: Here at 9h 00m a.m., l.m.t., I set off $38^{\circ} 46'$ N. on the lat. arc, and $2^{\circ} 38'$ N. on the decl. arc, and determine a meridian with the solar.

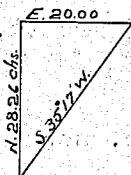
I now set a flag on line to the N., for the purpose of triangulation, as it is impossible to chain N. from this point:

I now go to this flag, and lay off a base, East, 20.00 chs. in length, at right angles to my line.

From E. end of base the flag set by Mr. Miller, bears S. $35^{\circ} 17'$ W., making an angle with the base of $54^{\circ} 43'$

$\tan 54^{\circ} 43' = 1.41322 \times 20.00 \text{ chs.} = 28.26 \text{ chs.}$

$28.26 \text{ plus } 25.83 = 54.09 \text{ chs. to flag.}$



From flag at 25.83; descend abruptly over precipitous breaks of San Rafael Reef, N. slope.

39.80 Dry gulch, about 500 ft. below flag, course E.; ascend gradually across basin draining E.

Enter scattering cedar and pinon timber.

Chains

- 40.00 Set an iron post, 3 ft. long, 1 in. in diam., on solid rock, in a mound of stone, 4 ft. base, $2\frac{1}{2}$ ft. high, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.
- | | | |
|---------------|------|------|
| $\frac{1}{4}$ | S 56 | S 31 |
| | 1912 | |
- raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor.
- 54.09 Flag on top of ridge, about 200 ft. above $\frac{1}{4}$ sec. cor., bears E. and W.; descend gradually.
- 59.00 Crest of sandstone ledge, bears E. and W.
Leave timber and descend abruptly.
- 59.20 Foot of ledge, 75 ft. high, bears E. and W.; continue to descend abruptly N. slope.
- 75.00 Dry gulch, about 600 ft. below ridge, course E.; ascend gradually S. slope.
- 80.00 Set an iron post, 3 ft. long, 3 ins. in diam., only 8 ins. in the ground, on account of underlying rock, supported by a mound of stone, 4 ft. base, 2 ft. high, for cor. of secs. 25, 30, 31 and 36, with brass cap, mkd.
- | | | | |
|--------|------|--------|------|
| T 23 S | | | |
| R 12 E | S 25 | R 13 E | S 30 |
| S 36 | S 31 | | |
| 1912 | | | |
- raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor.
- Land, rough and mountainous.
- Soil, S. 60 chs., nearly bare sandstone; N. 20 chs., disintegrated shales and sandstone, light, dry and warm, containing considerable gypsum and of poor quality.
- Not suited to cultivation, being too rocky; affords some grazing in N. 20 chs.
- Timber, scrub cedar and pinon; undergrowth, shadscale and salt sage.
- Sept. 16, 1912: At this cor. at app. noon, I set off $2^{\circ} 35'$ N. on the decl. arc, and observe the sun on the meridian. The resulting lat. is $38^{\circ} 47'$ N.

Chains

- Sept. 17, 1912: Deflecting from the solar line carried up from the S. yesterday, I run N. bet. secs. 25 and 30; ascending gradually over mountainous land, SE. slope, through scattering undergrowth of shadscale and salt sage.
- 2.20 Spur, about 50 ft. above cor., falls E.; descend abruptly N. slope.
- 8.50 Dry gulch, about 100 ft. below spur, course NE.; ascend gradually.
- 14.00 Narrow rock canon, dry, about 50 ft. deep, course SE. Continue to ascend gradually.
- 28.50 Rock spur, about 80 ft. above gulch, falls SE.; descend abruptly.
- 29.40 Rocky gulch, about 40 ft. below spur, course SE.; ascend gradually.
- 36.40 Top of rock spur, about 50 ft. high, falls SE.; descend abruptly over cliff 40 ft. high.
- 37.00 Foot of cliff; ascend gradually SE. slope, over bare surface rock, through scattering cedar timber.
- 40.00 Set an iron post, 3 ft. long, 1 in. in diam., on surface rock, in a mound of stone, 4ft. base, 2 $\frac{1}{2}$ ft. high, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.
- $$\begin{array}{c} \frac{1}{4} \\ \text{S } 25 \text{ | } \text{S } 30 \\ 1912 \end{array}$$
- raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor.
- 66.00 Rocky point, falls E.; descend abruptly.
- 68.00 Rocky gulch, about 50 ft. below point, course E.; ascend gradually SE. slope.
- 72.50 Rocky point, falls E.; descend abruptly.
- 74.00 Rocky gulch, about 60 ft. below point, course E.; ascend gradually SE. slope.
- 80.00 Set an iron post, 3 ft. long, 3 ins. in diam., on solid rock, surrounded by a mound of stone, 4 ft. base, 2 $\frac{1}{2}$ ft. high, for cor. of secs. 19, 24, 25 and 30, with brass cap, mkd.

Chains

T 23 S	
R 12 E	R 13 E
S 24	S 19
S 25	S 30
1912	

raise a mound of stone, 3 ft. base, 3 ft. high, W. of cor. Land, rough and mountainous. Surface, broken surface rock, cut by narrow canons in solid rock.

Soil, S. $\frac{1}{4}$ mile, disintegrated shales with much gypsum, poor quality.

N. $\frac{5}{4}$ mile, practically bare rock.

Timber, scrub cedar and pinon; undergrowth, low shadscale, salt sage and brigam brush.

There is a little grazing in the S. 20 chs.

N. bet. secs. 19 and 24; ascending gradually over rough mountainous land, draining E. and SE., over almost bare surface rock, through scattering cedar and pinon timber and scattering low shadscale and brigam brush.

22.10 Descend abruptly, bears NW. and SE.

24.00 Dry rock canon, about 75 ft. deep, course SE.; asc. abruptly

40.00 Set an iron post, 5 ft. long, 1 in. in diam., on solid rock, surrounded by a mound of stone, 4 ft. base, $2\frac{1}{2}$ ft. high, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.

$\frac{1}{4}$	S 24	S 19
1912		

48.00 raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor.

Ridge, about 500 ft. above sec. cor., bears E. and W.

Descend gradually.

52.03 South wall of canon, about 900 ft. deep; descend almost perpendicular wall of canon.

It is impossible to chain across this canon. I therefore set a flag at this point for purpose of triangulation.

Sept. 17, 1912.

Oct. 5, 1912: At 8h 10m a.m., l.m.t., at a point on line on N. side of canon, I set off $38^{\circ} 48.5'$ N. on lat. arc, and $4^{\circ} 43'$ S. on decl. arc, and determine a meridian with the solar.

Chains

From this point I lay off a base S. 20° 22' E., 12.00 chs. in length, whence flag on S. side of canon bears

S. 14° 00' W., making an angle with the base of 145° 38'

Thus by computation the angle at flag is 14° 00'

log. 12.00 chs. = 1.079181

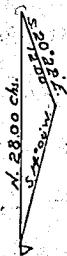
log. sin. 145° 38' = 9.751652

10830833

log. sin. 14° 00' = 9.583675

log. 28.00 chs. = 1.447158

28.00 chs. plus 52.03 chs. = 80.03 chs., point from which triangulation was made.



- 61.50 Dry canon, about 900 ft. deep, course E.; ascend very abruptly over sandstone wall of canon.
- 79.00 Top of canon wall, about 900 ft. above canon, bears W. and SE.; descend very gradually.
- 80.00 Point for cor. falls on top of large sandstone boulder, where it would be impracticable to set a cor., I therefore perpetuate this cor. as follows; at
- 80.47 Set an iron post, 3 ft. long, 3 ins. in diam., on solid rock, surrounded by a mound of stone, 4 ft. base, 2 1/2 ft. high, for witness to cor. of secs. 13, 18, 19 and 24, with brass cap, mkd.

T 23 S	
R 12 E	R 13 E
S 13	S 18
S 24	S 19
1912	

raise a mound of stone, 3 ft. base, 3 ft. high, W. of cor. Land, very rough and mountainous. Surface, bare sandstone surface rock and ledges. Practically no soil; totally worthless. Timber, scrub cedar and pinon; undergrowth, low shadscale and brigam brush.

Chains

North bet. secs. 13 and 18; descending gradually over rough mountainous land, across hollow, through heavy cedar and pinon timber and scattering low undergrowth of shadscale and brigam brush.

- 6.50 Ascend very gradually over surface rock.
- 13.80 Point, about 80 ft. high, falls SW.; descend.
- 21.90 Dry gulch, about 30 ft. deep, course SW.; ascend.
- 26.00 Point, about 50 ft. high, falls SW.; descend.

Oct. 5, 1912: Here at app. noon, I set off $4^{\circ} 47.5'$ S. on the decl. arc, and observe the sun on meridian. The result lat. is $38^{\circ} 49'$ N.

- 29.00 Dry gulch, about 30 ft. deep, course SW.; ascend.
- 40.00 Set an iron post, 3 ft. long, 1 in. in diam., only 6 ins. in the ground, on account of underlying rock, surrounded by a mound of stone, 4 ft. base, 2 ft. high, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.

$\frac{1}{4}$	S 13	S 18
	1912	

- 41.00 Low point, falls SW. Thence over numerous small points and gulches draining SW.
- 80.00 Set an iron post, 3 ft. long, 3 ins. in diam., only 14 ins. in the ground, on account of underlying rock, supported by a mound of stone, for cor. of secs. 7, 12, 13 and 18, with brass cap, mkd.

	T 23 S	
R 12 E	R 13 E	
S 12	S 7	
S 13	S 18	
	1912	

raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor. Land, rough and mountainous on SW. and W. slopes. Surface covered with sandstone boulders, with considerable sandstone surface rock. Soil, very shallow disintegrated sandstone of poor quality, too shallow and rocky to permit of cultivation; affords a little grazing. Timber, scrub cedar and pinon; undergrowth, shadscale and brigam brush.

Chains

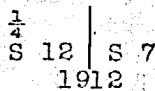
October 5, 1912.

Oct. 7, 1912: deflecting from a solar line carried up to this point Saturday, I run North bet. secs. 7 and 12; ascending gradually over mountainous land, across numerous small dry gulches and rocky points draining SW.; through heavy cedar and pinon timber and scattering low undergrowth of shadscale and salt sage.

17.00 Low point, falls SW.; desc. very gradually.

26.00 Small, dry gulch, course SW.; ascend gradually.

40.00 Set an iron post, 3 ft. long, 1 in. in diam., only 14 ins. in the ground, on account of underlying rock, supported by a mound of stone, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.

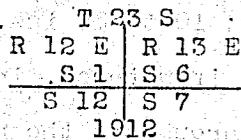


raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor.

71.60 Ascend abruptly steep SW. and S. slope.

77.30 Top of mesa, about 125 ft. high, bears E. and W. Thence across nearly level mesa.

80.00 Set an iron post, 3 ft. long, 3 ins. in diam., only 8 ins. in the ground, on account of underlying rock, surrounded by a mound of stone, 4 ft. base, 2 ft. high, for cor. of secs. 1, 6, 7 and 12, with brass cap, mkd.



raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor. Land, mountainous; surface covered with numerous sandstone boulders; general SW. exposure.

Soil, light, fine, dry, warm, sandy loam, rich in lime, 6 to 14 ins. deep on bedrock; too shallow to permit of cultivation, but affords good grazing.

Timber, scrub cedar and pinon; undergrowth, shadscale and salt sage.

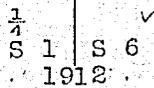
Chains

North bet. secs. 1 and 6; over nearly level mesa land, through heavy cedar and pinon timber and scattering low undergrowth of shadscale and salt sage.

11.20 Edge of mesa, bears E. and W.; descend abruptly N. slope.

21.00 Bottom of mesa, about 180 ft. below top, bears E. and W. Descend very gradually N. slope.

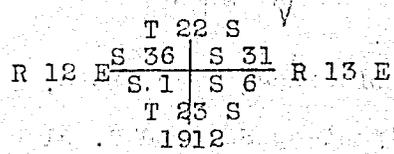
40.00 Set an iron post, 3 ft. long, 1 in. in diam., 24 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.



raise a mound of stone, 2 $\frac{1}{2}$ ft. base, 2 ft. high, W. of cor.

Thence across rolling land, draining E.

80.00 Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins. in the ground, for cor. of Tps. 22 and 23 S., Rs. 12 and 13 E., with brass cap, mkd.



raise a mound of stone, 3 ft. base, 2 ft. high, S. of cor.

Land, rolling and mountainous; surface covered with numerous sandstone and limestone boulders. General E. exposure.

Soil, light, fine, dry, warm, sandy loam of good texture, rather shallow on bedrock in S. $\frac{1}{2}$ mile, and not suited to cultivation; 10 to 30 ins. deep on clay subsoil, suited to cultivation if watered, in N. $\frac{1}{3}$ mile.

Good grazing throughout the mile.

Timber, scrub cedar and pinon; undergrowth, short shadscale and salt sage.

Oct. 7, 1912.

Robert E. Clark
U. S. Transitman.

Chains

Aug. 27, 1912, from cor. of Tps. 22 and 23 S., Rs. 13 and 14 E., deflecting from a solar line carried up to this point this a.m., I run

W. on a random line along N. bdy. of Tp. 23 S. R. 13 E., setting temporary $\frac{1}{4}$ sec. and sec. corners at intervals of 40.00 chs.

At 159.60 chs., set temporary point, near base of San Rafael Reef.

Aug. 27, 1912..

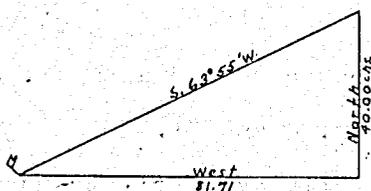
Howard W Miller
U. S. Surveyor.

Lines run by R. E. Clark, U. S. Transitman.

It being impossible to chain the remainder of the mile bet. secs. 2 and 35, on account of San Rafael Reef, I go to the temp. cor. of secs. 1, 2, 35 and 36.

Sept. 28, 1912: From this cor., I set a flag on line on top of San Rafael Reef, to the W. I now lay off a base, at right angles to my line, North, 40.00 chs. in length. From N. end of base, flag on top of reef bears S. $63^{\circ} 55'$ W., making an angle with the base of $63^{\circ} 55'$.

$\tan: 63^{\circ} 55' = 2.04276 \times 40.00 = 81.71$, distance to flag on top of reef..



Sept. 28, 1912.

It being impossible to reach this flag with my transit, or to chain from this flag, on W., I go to the cor. of Tps. 22 and 23 S., Rs. 12 and 13 E.,

Oct. 7, 1912; At this cor. I deflect from a solar line carried up from the S. this a.m., and run East on random line along N. bdy. of Tp. 23 S. R. 13 E., setting first temp. $\frac{1}{4}$ sec. cor. at theoretical distance of 42.31 chs., thence continue E. on random line, setting

Chains

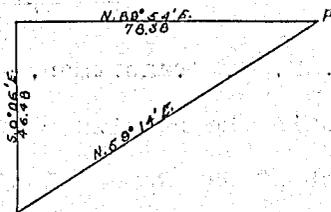
temp. $\frac{1}{4}$ sec. and sec. corners at intervals of 40.00 chs.
 At 242.31 chs., temp. cor. of secs. 3, 4, 33 and 34.

Oct. 7, 1912.

Oct. 11, 1912: From the temp. cor. of secs. 3, 4, 33 and 34, the flag, which on Sept. 28, I set on top of San Rafael Reef, bears N. $89^{\circ} 54'$ E.

I now lay off a base at right angles to this line, S. $0^{\circ} 06' E.$, 46.48 chs. in length.

From S. end of this base, flag on top of reef bears N. $59^{\circ} 14'$ E., making an angle with the base of $59^{\circ} 20'$
 $\tan. 59^{\circ} 20' = 1.68643 \times 46.48 = 78.38$



78.38 plus 242.31 plus 161.71 = 482.40 chs., length of random boundary line. The bearing of this triangulated portion of the line amounts to a falling S. of 14 lks.

Thus the random Tp. line would be

West, 482.40 chs., fall 14 lks. N. of cor. of Tps. 22 and 23 S., Rs. 12 and 13 E.

This falling answers to a correction of $0^{\circ} 01'$, or 2.3 lks. S. per mile, counting from the NE. cor. of the Tp.

October 11, 1912

N. $89^{\circ} 59'$ E. on true line along N. bdy. of Tp. 23 S. R. 13 E., bet. secs. 6 and 31.

Ascending gradually over rolling mountainous land, draining SW., through scattering cedar and pinon timber and considerable low undergrowth of shadscale and salt sage.

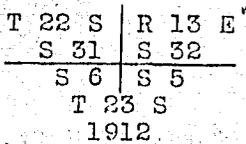
42.40 Set an iron post, 3 ft. long, 1 in. in diam., $2\frac{1}{2}$ ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.

$\frac{1}{4}$ S 31
 S 6
 1912

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., and raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high, N. of cor.

Chains

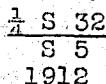
- 77.00 Ascend abruptly steep W. slope of knoll.
- 80.10 Top of knoll, about 125 ft. above $\frac{1}{4}$ sec. cor. Thence across flat top of knoll.
- 82.40 Set an iron post, 3 ft. long, 3 ins. in diam., only 12 ins. in the ground, on account of underlying rock, surrounded by a mound of stone to within 3 ins. of the top, for cor. of secs. 5, 6, 31 and 32, with brass cap, mkd.



raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor. Land, rolling mountainous on gentle SW. slope. Soil, light, fine, dry, warm, sandy loam, rich in lime, 8 to 20 ins. deep on clay subsoil, in W. 77 chs. Steep slopes of knoll are a stiff clay of poor quality. The soil on top of knoll is of good quality but rather shallow, and lying on limestone, with which knoll is capped. The gentler slopes are well suited to cultivation if watered, and the entire mile affords good grazing. Timber, scrub cedar and pinon; undergrowth, low shadscale and salt sage.

N. $89^{\circ} 59'$ E. bet. secs. 5 and 32; descending abruptly steep E. slope of knoll, over rolling mountainous land, covered with scattering cedar and pinon timber and considerable low undergrowth of shadscale and salt sage.

- 2.90 Foot of knoll, about 100 ft. below sec. cor., bears N. and S., thence descending very gradually.
- 29.00 Enter heavy cedar and pinon timber, bears N. and S.
- 40.00 Set an iron post, 3 ft. long, 1 in. in diam., only 6 ins. in the ground, on account of underlying rock, supported by a mound of stone, 4 ft. base, $2\frac{1}{2}$ ft. high, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.



raise a mound of stone, 3 ft. base, 3 ft. high, N. of cor.

Chains

- 73.00 Descend abruptly over rocky canon wall, bears NW. and SE.
- 76.00 Descend less abruptly along canon bottom. ✓
- 80.00 Set an iron post, 3 ft. long, 3 ins. in diam., only 10 ins. in the ground, on account of underlying rock, supported by a mound of stone, 4 ft. base, 2 ft. high, for cor. of secs. 4, 5, 32 and 33, with brass cap, mkd.

T 22 S	R 13 E
S 32	S 33
S 5	S 4
T 23 S	
1912	

raise a mound of stone, 3 ft. base, 3 ft. high, W. of cor. Corner stands just S. of bottom of dry canon, 100 ft. deep, course from NW. to NE.

Land, rolling mountainous on gentle E. slopes. Surface covered with numerous sandstone boulders, and cut by one very rocky canon at E. end of mile.

Soil, light, fine, dry, warm, sandy loam, rich in lime, 8 to 20 ins. deep on sandstone bedrock. Not suited to cultivation, but affords good grazing.

Timber, scrub cedar and pinon; undergrowth, low shadscale and salt sage.

N. 89° 59' E. bet. secs. 4 and 33; ascending over rough mountainous land, through heavy cedar and pinon timber and scattering undergrowth of low shadscale and salt sage, over rock wall of canon.

- 15.00 Top of canon wall, about 150 ft. above sec. cor., bears NE. and SW.
- 17.70 Desc. abruptly SE. slope, over sandstone ledges.
- 23.00 Dry canon, about 120 ft. deep, course NE.; ascend abruptly over sandstone ledges.
- 30.00 Spur, about 100 ft. high, falls NE.; descend abruptly.
- 40.00 Set an iron post, 3 ft. long, 1 in. in diam., on surface rock, surrounded by a mound of stone, 4 ft. base, 2½ ft. high, for ¼ sec. cor., with brass cap, mkd.

¼ S 33
S 4
1912

Chains

- raise a mound of stone, 4 ft. base, 3 ft. high, N. of cor.
- 40.10 Dry canon, about 120 ft. deep, course NE.; asc. abruptly.
- 48.60 Spur, about 80 ft. high, falls N.; desc. abruptly.
- 55.00 Dry canon, about 100 ft. deep, course N.; ascend along rocky, broken, NW. slope, through scattering timber.
- 80.00 Set an iron post, 3 ft. long, 3 ins. in diam., on limestone ledge, supported by a mound of stone, 4 ft. base, 2½ ft. high, for cor. of secs. 3, 4, 33 and 34, with brass cap, marked

T 22 S	R 13 E
S 33	S 34
S 4	S 3
T 23 S	
1912	

raise a mound of stone, 3 ft. base, 3 ft. high, W. of cor. Corner stands just under edge of mesa, bearing E. and W. Land, rough and mountainous on steep breaks draining N. Surface covered with sandstone and limestone boulders, with much exposed sandstone bedrock. Practically no soil. Not suited to agriculture or grazing. Timber, scrub cedar and pinon; undergrowth, low shadscale and salt sage.

N. 89° 59' E. bet. secs. 3 and 34; over rough mountainous land, through scattering cedar and pinon timber, and scattering low undergrowth of shadscale and brigam brush, along broken N. slope.

- 4.00 Descend very abruptly broken E. slope, over almost bare sandstone face of mountain.
 - 40.00 Point for ¼ sec. cor., inaccessible. Cor. not set
 - 68.00 Small, dry canon, about 1200 ft. below sec. cor., course S.; ascend very abruptly over huge, precipitous sandstone ledges on W. face of San Rafael Reef.
 - 78.29 Flag on top of San Rafael Reef, used in triangulations from both sides of reef, on random line, about 500 ft. above canon to the W.
- I found upon trial that an iron corner post could not be taken to this point. I therefore perpetuate the cor. of secs.

Chains

2, 3, 34 and 35 as follows; at
 78.30 I mark a cross(X) on surface rock, for witness corner to
 secs. 2, 3, 34 and 35, with 2 grooves on E., 4 grooves
 on W., and 12 on S. side of cross; raise a mound of stone,
 3 ft. base, 2 ft. high, W. of cor., and leave flag in mound
 Descend very abruptly E. face of San Rafael Reef.
 80.00 Point for cor. of secs. 2, 3, 34 and 35, inaccessible.
 Land, very rough and mountainous, on precipitous breaks
 into canon back of San Rafael Reef. Surface, broken sand-
 stone ledges, totally worthless.
 Practically no soil.
 Timber, scrub cedar and pinon; undergrowth, low shadscale
 and brigam brush.
 Practically no vegetation except in W. 4.00 chs.

N. 89° 59' E., from true point for cor. of secs. 2, 3, 34 and
 35; descending very abruptly E. face of San Rafael Reef,
 over smooth, bare sandstone surface, at an angle of about
 40°.

20.40 Temporary point, a substantial mound of stone, left by
 H. W. Miller.
 Descend abruptly from temp. point over steep breaks of
 San Rafael Reef.
 30.00 Hollow, about 1000ft. below witness sec. cor.; course
 NE. Enter short shadscale undergrowth; ascend.
 35.00 Spur, about 30 ft. high, falls NE.; descend.
 38.00 Hollow, about 30 ft. deep, course NE.; asc. abruptly.
 40.00 Set an iron post, 3 ft. long, 1 in. in diam., only 10 ins.
 in the ground, on account of underlying rock, supported
 by a mound of stone, 4 ft. base, 2 ft. high, for $\frac{1}{4}$ sec.
 cor., with brass cap, mkd.

$\frac{1}{4}$ S 35
 S 2

1912

raise a mound of stone, 3 ft. base, 2 ft. high, N. of cor.

N. Sec. 2

Chains

- 41.00 Spur, about 60 ft. high, falls N.; descend.
- 50.00 Hollow, about 70 ft. deep, course SE.; ascend.
- 60.00 Low ridge, about 40 ft. above hollow, bears N. and S.
Thence across wide hollow, draining S.
- 80.00 Set an iron post, 3 ft. long, 3 ins. in diam., only 12 ins. in the ground, on account of underlying rock, supported by a mound of stone, 4 ft. base, to within 3 ins. of the top, for cor. of secs. 1, 2, 35 and 36, with brass cap, mkd.

T 22 S	R 13 E
S 35	S 36
S 2	S 1
T 23 S	
1912	

raise a mound of stone, 2½ ft. base, 2 ft. high, W. of cor.
 Corner stands at base of ledge, 20 ft. high.
 Land, mountainous.
 Soil, gravelly clay and rocky.
 No timber; undergrowth, short shadscale.
 Some good grass.

- N. 89° 59' E. bet. secs. 1 and 36.
- Ascend abruptly over sandstone ledge.
- 0.20 Top of ledge, 20 ft. high, bears NW. and SE. Thence across flat ridge, through short undergrowth of greasewood.
- 4.00 Descend.
- 10.00 Hollow, course SE.; ascend.
- 14.60 Spur, about 50 ft. high, falls SE.; descend.
- 21.50 Hollow, course SE. Thence over broken land falling S.
Ascending.
- 28.40 Ridge, about 50 ft. high, bears NW. and SE.; descend.
- 32.80 Hollow, about 50 ft. deep, course SE.; ascend.
- 36.80 Spur, about 50 ft. high, falls SE.; descend gradually.
- 40.00 Set an iron post, 3 ft. long, 1 in. in diam., 24 ins. in the ground, for ¼ sec. cor., with brass cap, mkd.

¼ S 36	
S 1	
1912.	

raise a mound of stone, 2 ft. base, 1½ ft. high, N. of cor.

Chains

63.00 Large, dry wash, 1 ch. wide, drains N. 85° E.
 Thence over rolling sandy and rocky land, draining E.
 80.00 The cor. of Tps. 22 and 23 S., Rs. 13 and 14 E., previously described.
 Land, broken mountainous, draining easterly. General S. exposure.
 Soil, rocky clay and gypsum on hard clay and bedrock.
 No timber; undergrowth, greasewood.
 Some good grass for grazing.

Robert E. Clark
 U. S. Transitman.

General Description.

This Tp. is divided practically in half, from SW. to NE., by San Rafael Reef.

The lands lying S. and E. of the reef are open, rolling, desert, generally covered with short undergrowth, with considerable good grazing. They are suited to cultivation on the gentler slopes, if watered.

That portion of the Tp. lying N. and W. of the reef is very rough and rocky, supporting some scrub cedar and pinon timber and short undergrowth. It contains a little grazing land in the extreme NW., but is generally worthless.

Howard Miller
 U. S. Surveyor.

Robert E. Clark
 U. S. Transitman.

Boundaries of T.25 S., R.13 E.

Latitudes , Departures and Closing errors.

Lines designated	True bearing	Dist-ances	Latitudes		Departures		
			N.	S.	E.	W.	
E.bdy.sec.36 North		80.09	80.09				
E.bdy. sec.25 North		80.00	80.00				
E.bdy.sec.24							
S. $\frac{1}{4}$ mile	N. $6^{\circ}18'W.$	40.09	40.09			.21	
N. $\frac{1}{4}$ mile	N. $0^{\circ}03'W.$	40.05	40.05			.03	
E.bdy. sec.13							
S. $\frac{1}{4}$ mile	North	40.00	40.00				
N. $\frac{1}{4}$ mile	N. $0^{\circ}03'W.$	40.19	40.19			.04	
E.bdy.sec.12	N. $0^{\circ}03'W.$	80.38	80.38			.07	
E.bdy.sec.1							
S. $\frac{1}{4}$ mile	N. $0^{\circ}02'E.$	40.03	40.03		.02		
N. $\frac{1}{4}$ mile	N. $0^{\circ}18'W.$	39.06	39.06			.21	
N. bdy.							
T.23S., R.13E. S. $89^{\circ}59'W.$		482.40		.15		482.40	
W. bdy.							
T.23S., R.13E. South		400.00		400.00			
S. bdrs.secs. 30 and 29	East	163.34			163.34		
W.bdy.sec.33	S. $0^{\circ}03'E.$	80.00		80.00	.07		
Sbdrs.secs. 33, 34, 35 & 36	East	320.00			320.00		
Convergency						.56	
			479.89	480.15	483.43	483.53	
				479.89		483.43	
			Error in latitude-----		.24	.09	
			Error in departure-----				

Blank

Page

1912

Survey commenced Sept. 21, and executed with a W. and L. E. Gurdey solar compass, No. 1043, fitted with a Burt solar attachment, with horizontal limb reading to single minutes of arc, which is also the least count of the lat. and decl. arcs.

Sept. 19, 1912: At my camp in the NW. $\frac{1}{4}$ of sec. 28, T. 23 S. R. 13 E. I tested the adjustments of my instrument and corrected all errors. To test the adjustments of my solar apparatus by comparing its indications resulting from observations made on the sun during a.m. and p.m. hours, with a meridian determined by observations on Polaris made Sept. 13, 1912 as follows: Sept. 13, 1912 with my instrument set up over the S. end of the meridian, at about 7h 45m p.m. l.m.t., I commence following the eastern progress of Polaris, and when the star reaches its maximum position in azimuth, and begins to recede, I mark the line thus determined by a tack driven in a wooden peg, set firmly in the ground 5.00 chs. N. of my station. Sept. 13, 1912.

Sept. 14, 1912: With my instrument occupying the same position as last night, at 7h a.m. l.m.t., I lay off the azimuth of Polaris $1^{\circ} 29.7'$ to the west, and mark the true meridian thus determined by a tack driven in a wooden peg set firmly in the ground to the west of the peg set last night. Sept. 14, 1912.

Sept. 19, 1912: With my instrument set up over the S. end of the meridian determined on Sept. 14, at 4h 0m p.m. l.m.t., I set off $38^{\circ} 54'$ N. on the lat. arc, and $1^{\circ} 22'$ N. on the decl. arc; and determine a meridian with the solar. The line thus determined falls 0.1 in. to the west of the true meridian. Sept. 19, 1912.

Sept. 20, 1912: With my instrument occupying the same position as last night, at 8h 20m a.m. l.m.t., I set off $38^{\circ} 54'$ N. on the lat. arc, $1^{\circ} 06'$ N. on the decl. arc,

and determine a meridian with the solar. The line thus determined coincides with the true meridian. I therefore conclude that the adjustments of my instrument are satisfactory.

The mag. decl. is $16^{\circ}10'E$.

Sept. 20, 1912.

Measurements.

A steel tape, 5 chains in length, was used in the measurement of this line, together with clinometer for determining slope angles; and only the reduced horizontal distances appear in the official notes.

The tape used was tested on Sept. 19, 1912, comparison being made with a standard tape, 66 ft. long, kept and used for that purpose only.

Sept. 21, 1912. I commence at the cor. of Tps. 22 and 23 S., Rs. 13 and 14 E., in lat. $38^{\circ}51'16"N.$; long. $110^{\circ}27'19"W.$, previously described.

At 8h 10m a.m. l.m.t., I set off $36^{\circ}51'N.$ on the lat. arc; $0^{\circ}43'N.$ on the decl. arc; and determine a meridian with the solar. Thence I run North along range line, retracing E. bdy. of Tp. 22 S., R. 13 E., setting temp. $\frac{1}{4}$ and sec. cors. at intervals of 40.00 and 80.00 chs. for future reference. At 40.00 chs. I make diligent search for the old $\frac{1}{4}$ sec. cor., but fail to find any trace of it. At 84.10 chs. I fall 91 lks. W. of old cor. of secs. 25, 30, 31, and 36, which is a sandstone $14 \times 10 \times 5$ ins., loosely set in the ground, mkd. with 1 notch on S. and 4 notches on N. edges, with a round of stone S. I set over this old cor., and run North bet. secs. 25 and 30; and at 39.92 chs. fall 5 lks. E. of old $\frac{1}{4}$ sec. cor., which is a sandstone $14 \times 10 \times 4$.

Re-establishment of E. Bdy. of Tps. 22 S., R. 13 E.

ins., set firmly in the ground, mkd. $\frac{1}{4}$ on W. face; no accessories.

I continue my line north bet. secs. 25 and 30; and at 70.79.84 chs. fall 15 lks. E. of cor. of secs. 19, 24, 25, and 30, which is a sandstone 14 x 12 x 8 ins., firmly set in the ground, mkd. with 2 grooves on S., and 4 grooves on N. faces; no accessories. I set over this old cor., and run North bet. secs. 19 and 24; and at 39.50 chs. fall 28 lks. E. of old $\frac{1}{4}$ sec. cor., which is a sandstone 30 x 12 x 8 ins. firmly set in a mound of stone, mkd. $\frac{1}{4}$ on W. face; no accessories. I set over this old cor., and continue north bet. secs. 19 and 24, and at 79.50 chs. fall 33 lks. W. of cor. of secs. 13, 18, 19, and 24, which is a sandstone 18 x 10 x 6 ins. firmly set in the ground, mkd. with 4 notches on S. edge; no accessories. I set over this old cor. and run north bet. secs. 13 and 18; and at 40.00 and 80.00 chs., make careful and diligent search for old corners; but fail to find any traces of such corners. I later make search for the witness corners to these corners, in their reported locations, but fail to find any such corners. At 119.62 chs. fall 29 lks. W. of old $\frac{1}{4}$ sec. cor., which is a sandstone 12 x 8 x 6 ins., firmly set in the ground, mkd. $\frac{1}{4}$ on W. face; no accessories. I set over this old $\frac{1}{4}$ sec. cor., and run north bet. secs. 7 and 12; and at 38.92 chs. fall 44 lks. E. of cor. of secs. 1, 6, 7, and 12, which is a sandstone 20 x 12 x 6 ins., set firmly in the ground, mkd. 5 grooves on S. and 1 groove on N. face; no accessories.

Instrument in transit at noon prevents latitude observation. Sept. 21, 1912.

Sept. 26, 1912: From cor. of Tps. 22 and 23 S., Rs. 13 and 14 E., I run, deflecting from a solar line previously established at this point,

Re-establishment of the E.Bdy.of Tp.22 S., R.13 E.

- Chains. N.0° 37'E.on true line along E.bdy.sec.36,
 Ascending gradually over rolling mountainous land;
 through dense undergrowth of sage, rabbit brush and
 greasewood.
- 1.00 Ascend very abruptly S.slope of knoll.
- 2.80 Top of knoll, 75 ft.above cor., capped by a sandstone
 ledge, 20 ft.high,
 Descend abruptly N.slope of knoll.
- 4.40 Foot of knoll. Thence across small flat.
- 11.00 Ascend abruptly S.slope.
- 13.40 Top of ascent, bearing E.and W. Thence across rolling
 mesa or bench. Leave greasewood and sage, and enter
 low shadscale and salt sage.
- 40.00 Set an iron post 3 ft.long, 1 in.in diam., 26 ins.in the
 ground, for $\frac{1}{4}$ sec.cor.on E.bdy.of sec.36, with brass
 cap mkd.
- $\frac{1}{4}$ |
 S 36 |
 1912
- raise a mound of stone, 2 ft.base, $1\frac{1}{2}$ ft.high W.of cor.
- 42.05 Proportionate measurement,
 Set an iron post 3 ft.long, 1 in.in diam., 26 ins.in the
 ground, for re-established $\frac{1}{4}$ sec.cor. on W.bdy.of sec.
 31, with brass cap mkd.
- $\frac{1}{4}$ |
 S 31 |
 1912
- raise a mound of stone 2 ft.base, $1\frac{1}{2}$ ft.high E.of cor.
- 43.00 Descend N.slope.
- 48.00 Dry arroyo, course E.; ascend gradually.
- 55.80 Top of ascent. Thence over rolling, sandy land.
- 80.00 Set an iron post 3 ft.long, 3 ins.in diam., 24 ins.in
 the ground, for cor.of secs.25 and 36, with brass cap
 mkd.
- T 22 S
 R 13 E |
 S 25 |
 S 36 |
 1912
- raise a mound of stone 2 ft.base, 2 ft.high W.of cor.
 Land, rolling, mountainous.

-3-

Re-establishment of the E.Bdy. of Tp.22 S., R.13 E.

Chains. Soil, loose, dry sand and gravel, 8 to 30 ins. deep, on stiff clay subsoil; suited to cultivation if watered; affords good grazing.

No timber; undergrowth, salt sage, shadscale, sage and rabbit brush and greasewood.

N.0°37'E. on true line along E. bdy. of sec. 25;

Over rolling mountainous land; through considerable low undergrowth of shadscale and salt sage.

4.10 Old cor. of secs. 25, 30, 31, and 36, previously described. I destroy all traces of old cor., and replace it with An iron post 3 ft. long, 3 ins. in dia., set only 14 ins. in the ground, on account of underlying rock, supported by a substantial mound of stone, for re-established cor. of secs. 30 and 31, with brass cap mkd.

T 22 S
 | R 14 E
 | S 30
 | S 31
 1912

raise a mound of stone, 3 ft. base, 2 ft. high E. of cor. Thence N.0° 04' W. on true line along E. bdy. of sec. 25,

5.00 Descend abruptly NE. slope.
 13.00 Dry arroyo, about 30 ft. below cor., course SE. Ascend very gradually.

38.40 Top of low point, fallst SE.; descend very gradually.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor. on E. bdy. sec. 25, with brass cap mkd.

$\frac{1}{4}$
 | S 25
 1912

raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high W. of cor.
 44.02 Old $\frac{1}{4}$ sec. cor. previously described. I destroy all traces of this old cor., and replace it with

An iron post 3 ft. long, 1 in. in dia. set 26 ins. in the ground, for re-estab. $\frac{1}{4}$ sec. cor. on W. bdy. sec. 30, with brass cap mkd.

$\frac{1}{4}$
 | S 30
 1912

raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high E. of cor.

Chains. Thence N.0° 07'W. on true line along E. bdy. sec. 25;
 59.50 Dry arroyo, 40 lks. wide, course SE.; ascend gradually.
 80.00 Set an iron post 3 ft. long, 3 ins. in dia., 24 ins. in
 the ground, for cor. of secs. 24 and 25, with brass cap
 mkd.

T 22 S
R 13 E
S 24
S 25

1912

raise a mound of stone, 2 ft. base, 1½ ft. high W. of cor.

Land rolling.

Soil, loose, dry sand, 8 to 20 ins. deep, on stiff clay
 subsoil, in S. ½ mile. Very light and fine, and rich
 in gypsum, in some places almost like ashes, in N. ½
 mile; 10 to 20 ins. deep, on stiff clay subsoil.

Suited to cultivation if watered, in S. ½ mile.

Good grazing throughout the mile.

No timber. Undergrowth, low shadscale and salt sage.

N.0°07'W. on true line along E. bdy. sec. 24,

Ascending gradually over rough, mountainous land; through
 scattering low undergrowth of shadscale and salt sages
 3.94 Old cor. of secs. 19, 24, 25, and 30, previously described.
 Destroy all traces of this old cor., and replace it with
 An iron post, 3 ft. long, 3 ins. in dia., set 24 ins. in the
 ground, for re-estab. cor. of secs. 19 and 30, with brass cap
 mkd.

T 22 S
R 14 E
S 19
S 30

1912

raise a mound of stone, 2 ft. base, 1½ ft. high E. of cor.

Thence N.0°24'W. on true line along E. bdy. sec. 24,

7.00 Ascend very abruptly steep SE. slope.
 14.00 Foot of sandstone and gypsum cliff, bearing NE. and SW.
 Ascend over cliff.
 15.00 Top of cliff, 75 ft. high, and about 200 ft. above cor.
 Ascend less abruptly over rocky S. slope.
 36.80 Ridge, about 300 ft. above cor., bears E. and W.;
 Descend over sandstone ledges and boulders.

Chains

40.00 Set an iron post, 3 ft. long, 1 in. in diam., on sandstone ledge, in mound of stone, 4 ft. base, 2 $\frac{1}{2}$ ft. high, for $\frac{1}{4}$ sec. cor. on E. bdy. sec. 24, with brass cap, mkd.

$\frac{1}{4}$ ✓
 S 24
 1912

raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor.

43.44 Old $\frac{1}{4}$ sec. cor., previously described. I destroy all traces of old cor., and replace it with an iron post, 3 ft. long, 1 in. in diam., set on sandstone ledge in a mound of stone, 4 ft. base, 2 $\frac{1}{2}$ ft. high, for re-established $\frac{1}{4}$ sec. cor. on W. bdy. sec. 19, with brass cap, mkd.

$\frac{1}{4}$ ✓
 S 19
 1912

raise a mound of stone, 3 ft. base, 2 ft. high, E. of cor.

Thence N. 0° 28' E. on true line along E. bdy. sec. 24.

Descending very gradually over nearly level land, through considerable low undergrowth of shadscale and salt sage.

80.00 Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins. in the ground, for cor. of secs. 13 and 24, with brass cap, mkd.

T 22 S
 R 13 E
 S 13
 S 24 ✓
 1912

raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high, W. of cor.

Land, rough and mountainous in S. $\frac{1}{2}$ mile; gently rolling in N. $\frac{1}{2}$ mile. Surface of S. $\frac{1}{2}$ mile, covered with many huge sandstone boulders, and broken by numerous sandstone ledges.

Soil, in S. $\frac{1}{2}$ mile, very shallow, stiff clay; worthless.

N. $\frac{1}{2}$ mile, light, fine, dry, warm, sandy loam of good texture, 10 to 30 ins. deep, on clay subsoil. Suited to cultivation if watered; affords good grazing.

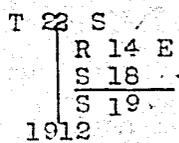
No timber; undergrowth, shadscale and salt sage.

N. 0° 28' E. on true line along E. bdy. sec. 13; over gently rolling land, draining NE., through considerable low undergrowth of shadscale and salt sage, and Brigham brush.

Descend.

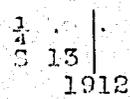
Chains

3.44 Old cor. of secs. 13, 18, 19 and 24, previously described. I destroy all traces of old cor. and replace it with an iron post, 3 ft. long, 3 ins. in diam., set 24 ins. in the ground, for re-established cor. of secs. 18 and 19, with brass cap, mkd.



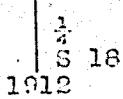
raise a mound of stone, 2 ft. base, 1½ ft. high, E. of cor. Thence N. 0° 08' E. on true line along E. bdy. of sec. 13.

- 20.00 Ascend gradually.
- 27.40 Low ridge, falls NE.; descend gradually.
- 30.00 Hollow, course NE.; ascend gradually.
- 33.00 Low ridge, bears NE. and SW.; descend gradually over sandstone boulders and considerable surface rock.
- 40.00 Set an iron post, 3 ft. long, 1 in. in diam., on surface rock, in a mound of stone, 4 ft. base, 2½ ft. high, for ½ sec. cor. on E. bdy. sec. 13, with brass cap, mkd.



raise a mound of stone, 5 ft. base, 2 ft. high, W. of cor.

- 43.31 Proportionate measurement
Set an iron post, 3 ft. long, 1 in. in diam., only 6 ins. in the ground, on account of underlying rock, supported by a mound of stone, 4 ft. base, 2 ft. high, for re-establishing ¼ sec. cor. on W. bdy. sec. 18, with brass cap, mkd.



raise a mound of stone, 2 ft. base, 2 ft. high, E. of cor.

- 54.00 Edge of perpendicular ledge, 50 ft. high, bears NE. and SW.; desc. abruptly rocky NW. slope.
- 64.00 Dry arroyo, about 250 ft. below top of ledge, course NW.; ascend gradually.
- 70.00 Low point, falls W.; desc. gradually NW. slope.

Chains

<p>80.00</p>	<p>Set an iron post, 3 ft. long, 3 ins. in diam., only 10 ins. in the ground, on account of underlying rock, surrounded by a mound of stone 4 ft. base, 2 ft. high, for cor. of secs. 12 and 13, with brass cap, mkd.</p> <div style="text-align: center;"> <table border="0"> <tr> <td></td> <td>T 22 S</td> <td></td> </tr> <tr> <td>R 13 E</td> <td> </td> <td></td> </tr> <tr> <td>S 12</td> <td> </td> <td></td> </tr> <tr> <td>S 13</td> <td> </td> <td></td> </tr> <tr> <td></td> <td>1912</td> <td></td> </tr> </table> </div> <p>raise a mound of stone, 3 ft. base, 2 ft. high; W. of cor. Land, gently rolling bench and rough mountainous. Surface of R. $\frac{1}{2}$ mile covered with numerous sandstone boulders, with considerable surface rock. Soil, S. 30. chs., light, fine, dry, warm, sandy loam, 10 to 30 ins. deep on clay subsoil; suited to cultivation if watered and affords good grazing. Remainder of mile, stiff clay, not suited to cultivation but affords a little grazing in places. No timber; undergrowth, low shadscale, salt sage and Brigham brush.</p>		T 22 S		R 13 E			S 12			S 13				1912	
	T 22 S															
R 13 E																
S 12																
S 13																
	1912															
<p>3.19</p>	<p>N. 0° 08' E. on true line along E. bdy. of sec. 12; ascending gradually over broken rolling land, sloping W., through scattering low undergrowth of shadscale and salt sage.</p> <p>Proportionate measurement</p> <p>Set an iron post, 3 ft. long, 3 ins. in diam., only 8 ins. in the ground, on account of underlying rock, surrounded by a mound of stone, 4 ft. base, 2 ft. high, for re-established cor. of secs. 7 and 18, with brass cap, mkd.</p> <div style="text-align: center;"> <table border="0"> <tr> <td></td> <td>T 22 S</td> <td></td> </tr> <tr> <td>R 14 E</td> <td> </td> <td></td> </tr> <tr> <td>S 7</td> <td> </td> <td></td> </tr> <tr> <td>S 18</td> <td> </td> <td></td> </tr> <tr> <td></td> <td>1912</td> <td></td> </tr> </table> </div> <p>raise a mound of stone, 3 ft. base, 3 ft. high, E. of cor.</p> <p>4.20 Edge of sandstone ledge, bears E. and W.; desc. over ledge.</p> <p>4.40 Foot of ledge, about 30 ft. below top; descend gradually.</p> <p>9.00 Dry arroyo, course NW.; ascend very gradually.</p> <p>14.00 Ascend abruptly, rocky SW. slope.</p> <p>Descend.</p>		T 22 S		R 14 E			S 7			S 18				1912	
	T 22 S															
R 14 E																
S 7																
S 18																
	1912															

Chains

16.00 Rocky spur, about 50 ft. high, falls W.; desc. NW. slope.
 22.00 Enter gulch bottom bears NE. and SW.; descend very gradually along gulch bottom.
 34.20 Dry arroyo, 30 lks. wide in bottom of gulch, course N. 30° E.; ascend very gradually across gulch bottom.
 40.00 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for $\frac{1}{2}$ sec. cor. on E. bdy. of sec. 12, with brass cap, mkd.

$\frac{1}{4}$ ✓
 S 12
 1912

raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high, W. of cor.
 43.06 Old $\frac{1}{2}$ sec. cor., previously described. I destroy all traces of this old cor. and replace it with an iron post, 3 ft. long, 1 in. in diam., set 26 ins. in the ground, for re-established $\frac{1}{2}$ sec. cor. on W. bdy. of sec. 7, with brass cap, mkd.

$\frac{1}{4}$ ✓
 S 7
 1912

raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high, E. of cor.
 Thence I run N. 0° 39' W. on true line along E. bdy. of sec. 12.

45.00 Dry arroyo, 30 lks. wide, course SE.; ascend gradually.
 46.00 Base of ledge, 30 ft. high, bears E. and W.; ascend abruptly over ledge.
 50.00 Crest of ledge. Thence across gently rolling mesa.
 77.50 Descend abruptly N. slope.

80.00 Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins. in the ground, for cor. of secs. 1 and 12, with brass cap, mkd.

T 22 S
 R 13 E
 S 1
 S 12
 1912

raise a mound of stone, 2 ft. base; 2 ft. high, W. of cor.
 Corner stands at edge of flat gulch bottom.

Land, rolling; surface, gravelly with some sandstone boulders.

Soil, light, dry, fine, warm, sandy loam, mixed with clay

Re-establishment of the E.Bdy. of Tp. 22 S., R. 13 E.

Chains.

and gypsum, of medium quality, and suited to cultivation, if watered; affords good grazing.

No timber.

Undergrowth, low shadscale and salt sage.

Note: At noon hour, instrument in transit, preventing observation for latitude. Sept. 26, 1912.

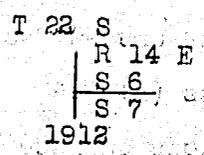
Sept. 23, 1912: At 8h 30m a.m. l.m.t., I set off 38° 55.5' N. on the lat. arc; 0° 04' S. on the decl. arc; and determine a meridian with the solar at the temporary cor. of secs. 1 and 12. Thence I run

N. 0° 39' W. on true line along E. bdy. of sec. 1, Descending very gradually across flat gulch bottom; through scattering low undergrowth of shadscale and salt sage.

1.98 Old cor. of secs. 1, 6, 7, and 12, previously described.

I destroy all traces of this old corner, and replace it with

An iron post, 3 ft. long, 3 ins. in dia., set only 12 ins. in the ground, on account of underlying rock, supported by a substantial mound of stone, for re-established cor. of secs. 6 and 7, with brass cap mkd.



raise a mound of stone 2½ ft. base, 2 ft. high E. of cor. Thence N., on true line bet. secs. 1 and 6,

2.10 Dry arroyo, in gulch bottom, course NE.; ascend abruptly over gypsum hills.

3.80 Spur, falls NE.; descend abruptly.

6.00 Dry gulch, about 30 ft. deep, course NE. Ascend gradually.

10.00 Spur, falls E. Descend abruptly.

13.20 Dry gulch, about 40 ft. deep, course E. Ascend abruptly.

18.20 Spur, about 50 ft. high, falls W.

Descend.

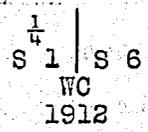
Re-establishment of the E. Edy. of Tp. 22 S., R. 13 E.

Chains.

- 21.30 Small dry canon, about 40 ft. deep, course NE.
Ascend very abruptly over surface sandstone, over E. breaks of San Rafael Reef.
- 25.00 Spur, about 80 ft. high, falls E.
Descend very abruptly, over canon wall.
- 26.60 Dry canon, about 125 ft. deep, course E.
Ascend over precipitous wall of canon.
- 30.80 Sandstone point, about 150 ft. high, falls E.
Descend very abruptly, over rock wall of canon.
- 38.80 Dry canon, about 150 ft. deep, course E. Ascend very abruptly over rock wall of canon.
- 40.00 Point for $\frac{1}{4}$ sec. cor. sec. 1 falls on inaccessible canon wall.
- 41.98 Point for $\frac{1}{4}$ sec. cor. sec. 6 falls on inaccessible canon wall.

46.00 Ascend more gradually.

46.17 Set an iron post, 3 ft. long, 1 in. in dia., on solid rock, in a mound of stone, 4 ft. base, 2 ft. high, for witness to $\frac{1}{4}$ sec. cor., bet. secs. 1 and 6, with brass cap mkd.



whence a point on sandstone surface rock bears E. 5 lks. dist., mkd. with a cross (X) B P

A point on sandstone surface rock, bears W. 5 lks. dist., mkd. with a cross (X) B P

Corner stands about 250 ft. above canon to the E.

52.00 Top of sandstone point, about 60 ft. above witness $\frac{1}{4}$ sec. cor., falls E.

It is impossible to chain further on this line, on account of the smooth, precipitous breaks of San Rafael Reef. I therefore set a flag on line to the N. at about the proper position for the Tp. corner. I now lay off a base to the W.; at right angles to my line, 10.00 chs. in length.

Re-establishment of the F.Bdy. of Tp. 22 S., R. 13 E.

Chains.

From W. end of base the flag to the N. bears N. 17° 20' E. making an angle with the base of 72° 40' ; tan. 72° 40' equals 3.20406 x 10.00, equals 32.04. 32.04 chs. plus 52.00 chs., equals 84.04 chs.,

81.98 To flag on line. I now measure back S. 2.06 chs. to Point 80.00 chs. N. of old cor. of secs. 1, 6, 7, and 12. Set temp. cor. of Tps. 21 and 22 S., Rs. 13 and 14 E. True point for cor. of Tps. 21 and 22 S., Rs. 13 and 14 E., as determined on Sept. 30, 1912, in survey of N. bdy. of Tp. Land, rough and mountainous;

Surface of south $\frac{1}{4}$ mile covered with sandstone boulders; north $\frac{3}{4}$ mile bare surface rock.

Soil in S. $\frac{1}{4}$ mile, stiff clay, rich in gypsum, shallow and of very poor quality; not suited to cultivation; but affords a little grazing. No soil on N. $\frac{3}{4}$ mile.

No timber.

Undergrowth, low shadscale and salt sage.

Sept. 23, 1912.

WEST BOUNDARY OF T. 22 S., R. 13 E.

Oct. 16, 1912, I commence at the cor. of Tps. 22 and 23 S. Rs. 12 and 13 E., heretofore described in notes of the W. bdy. of T. 23 S., R. 13 E.

At 8h 0m a.m. l.m.t., I set off 38° 51' N. on the lat. arc, 8° 52' S. on the decl. arc; and determine a meridian with the solar.

Thence I run

North on range line bet. secs. 31 and 36,

Over nearly level land; through scattering cedar and pinon timber and scattering low undergrowth of shadscale and salt sage.

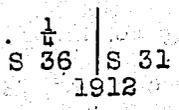
20.00 Ascend very gradually over S. slope.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap mkd.



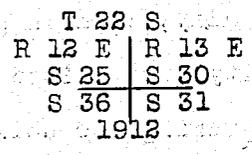
WEST BOUNDARY OF Tp.22 S., R.13 E.

Chains.



dig pits 18 x 18 x 12 ins. N. and S. of post, 3 ft. dist., and raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high W. of cor..

- 60.00 Foot of mesa, bears E. and W. Ascend abruptly over S. slope.
- 61.00 Edge of mesa, about 100 ft. above foot, bears E. and W. Thence across nearly level mesa.
- 66.00 Descend gradually along W. slope of mesa.
- 80.00 Set an iron post 3 ft., long, 3 ins. in dia., 24 ins. in the ground, for cor. of secs. 25, 30, 31, and 36, with brass cap mkd.

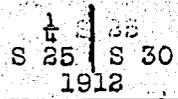


raise a mound of stone 2 1/2 ft. base, 2 ft. high W. of cor. Land, rolling; surface covered with some sandstone and limestone boulders. Soil, light, fine, dry, warm, sandy loam, 8 to 20 ins. deep, on clay subsoil; suited to cultivation on gentler slopes if watered; affords good grazing. Timber, cedar and pinon. Undergrowth, low shadscale and salt sage.

North bet. secs. 25 and 30,

Descending very gradually, over rolling land; through scattering cedar and pinon timber and scattering low undergrowth of shadscale and salt sage; along steep W. slope of mesa.

- 10.00 Ascend gradually over SW. slope.
- 20.00 Edge of mesa, about 50 ft. above sec. cor., bears NW. and SE. Thence across rolling mesa.
- 40.00 Set an iron post 3 ft. long, 3 in. dia., 26 ins. in the ground, for 1/4 sec. cor., with brass cap mkd.



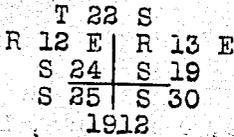
WEST BOUNDARY OF T. 22 S., R. 13 E.

Chains.

dig pits 18 x 18 x 12 ins. N. and S. of post 3 ft. dist.; and raise a mound of earth 3 1/2 ft. base, 1 1/2 ft. high W. of cor.

80.00

Set an iron post 3 ft. long, 3 ins. in dia., 24 ins. in the ground, for cor. of secs. 19, 24, 25, and 30, with brass cap mkd.



raise a mound of stone, 2 ft. base, 2 ft. high W. of cor. Land, rolling mesa; surface covered with limestone boulders.

Soil, light, fine, dry, warm, sandy loam, rich in lime, 10 to 20 ins. deep, on clay subsoil; suited to cultivation if watered; affords good grazing.

Timber, scrub cedar and pinon pine; undergrowth low shade and salt sage.

Instrument in transit at noon preventing lat. observation.

Oct. 16, 1912.

Oct. 18, 1912:

From the cor. of secs. 19, 24, 25, and 30,

Deflecting from solar line previously carried up from the S., I run

North bet. secs. 19 and 24,

Over gently rolling mesa; through scattering cedar and pinon timber, and scattering low undergrowth of shade and salt sage.

40.00

Set an iron post 3 ft. long, 1 in. dia., 26 ins. in the ground, for 1/4 sec. cor., with brass cap mkd.



dig pits 18 x 18 x 12 ins. N. and S. of post, 3 ft. dist.; and raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high W. of cor.

60.00

Leave mesa, bears N. 10° E. and W.

Chains. Thence along steep W. slope of mesa.

77.50 Descend abruptly over steep N. slope.

80.00 Set an iron post 3 ft. long, 3 ins. in dia., only 10 ins. in the ground, on account of underlying rock, surrounded by a mound of stone, 4 ft. base, 2 ft. high, for cor. of secs. 13, 18, 19, and 24, with brass cap mkd.

T 22 S	
R 12 E	R 13 E
S 13	S 18
S 24	S 19
1912	

raise a mound of stone, 3 ft. base, 2 ft. high W. of cor.

Land, gently rolling mesa and mountainous; surface covered with limestone boulders.

Soil, on mesa, light, fine, dry, warm, sandy loam, rich in lime, 8 to 24 ins. deep, on clay subsoil; suited to cultivation if watered.

Soil, on steep slopes of mesa, stiff, rocky clay of poor quality.

The entire mile affords good grazing.

Timber, scrub cedar and pinon; undergrowth, low shade scale and salt sage.

Clouds obscure the sun on meridian, preventing lat. obsn.

Oct. 18, 1912.

Oct. 24, 1912: At 8h on a.m. l.m.t., I set off 38° 54' N. on the lat. arc; 11° 44' S. on the decl. arc; and determine a meridian with the solar at the cor. of secs. 13, 18, 19, and 24. Thence I run

North bet. secs. 13 and 18,

Descending abruptly, over mountainous land, over steep N. slope, through scattering cedar and pinon timber, and scattering low undergrowth of shade scale and salt sage.

4.00 Foot of point, about 100 ft. below cor., Thence descend gradually over rolling land.

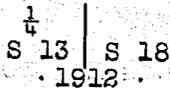
29.00 Dry gulch, about 150 ft. below cor., course NW.

Ascend.

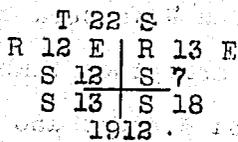
WEST BOUNDARY OF T. 22 S., R. 13 E.

Chains.

- 31.30 Low point, falls W.; descend abruptly.
- 38.80 Dry canon, about 75 ft. below point, course NE.
- 44.00 Ascend gradually.
- 40.00 Set an iron post 3 ft. long, 1 in. in dia.; only 6 ins. in the ground, on account of underlying rock; surrounded by a mound of stone 4 ft. base, 2 ft. high, for $\frac{1}{4}$ sec. cor.; with brass cap mkd.



- raise a mound of stone, 3 ft. base, 2 ft. high W. of cor.
- Ascend abruptly over canon wall; over sandstone ledges.
- 47.50 Top of canon wall; bears E. and W.; about 100 ft. above $\frac{1}{4}$ sec. cor.; ascend gradually over S. slope.
- 76.00 Foot of mesa, bears NW. and SE.; ascend abruptly over S. slope.
- 80.00 Set an iron post 3 ft. long, 3 ins. in dia., only 12 ins. in the ground, on account of underlying rock, supported by a substantial mound of stone, for cor. of secs. 7, 12, 13, and 18, with brass cap mkd.



- raise a mound of stone, 3 ft. base, 2 ft. high W. of cor.
- Corner stands on steep S. slope, about 100 ft. above foot of mesa.
- Land; mountainous; surface quite rocky.
- Soil; light, fine, dry, warm, sandy loam of good texture, shallow on bedrock, except on steep breaks of mesas, where it is a stiff, rocky clay of poor quality; not suited to cultivation, being too shallow and rocky.
- Entire mile affords good grazing.
- Timber, scrub cedar and pinon; undergrowth, low shadscale and salt sage.

WEST BOUNDARY OF T. 22 S., R. 13 E.

Chains.

North bet. secs. 7 and 12,

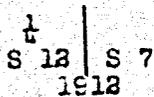
Ascending abruptly over mountainous land; through scattering cedar and pinon timber; and scattering low undergrowth of shadscale and salt sage; over steep S. breaks of mesa.

1.00 Edge of mesa, about 40 ft. above sec. cor., bears N. 70° W. and S. 70° E. Thence across rolling mesa; through heavy cedar and pinon timber.

13.00 Edge of mesa, bears N. 70° W. and S. 70° E.; descend abruptly over N. slope.

23.20 Foot of mesa, about 100 ft. below top; Thence across nearly level basin facing NE. Leave timber.

40.00 Set an iron post 3 ft. long, 1 in. in dia., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap mkd.

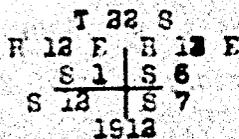


dig pits 18 x 18 x 12 ins. N. and S. of post 3 ft. dist. and raise a mound of earth 3½ ft. base, 1½ ft. high W. of cor.

72.10 Foot of mesa, bears E. and W.; ascend abruptly S. slope. Enter scattering cedar and pinon timber, bears E. and W.

78.70 Top of mesa, bears E. and W. about 150 ft. high. Thence across mesa, near E. end of same.

80.00 Set an iron post 3 ft. long, 3 ins. in diam., only 8 ins. in the ground, on account of underlying rock, surrounded by a mound of stone, 4 ft. base, 2 ft. high, for cor. of secs. 1, 6, 7, and 12, with brass cap mkd.



raise a mound of stone 3 ft. base, 3 ft. high W. of cor.

Land, gently rolling with NE. exposure, and mountainous on steep N. and S. breaks of mesas.

Soil, on rolling portion, light, fine, dry, warm, sandy loam, rich in lime, 20 to 30 ins. deep, on clay subsoil; suited to cultivation, if watered. Soil on steep

WEST BOUNDARY OF T.22 S., R.13 E.

Chains.

slopes stiff, rocky clay of poor quality.
Good grazing on entire mile.
Timber, scrub cedar and pinon; undergrowth, low shadscale and salt sage.

North bet. secs. 1 and 6,

Over gently rolling mesa; through scattering cedar and pinon timber and scattering low undergrowth of shadscale and salt sage.

- 5.00 Edge of mesa, bears NW. and SE. Desc. abruptly, NE. slope.
- 15.00 Foot of mesa, about 175 ft. below top, bears NW. and SE. Descend gradually over N. slope.
- 26.00 Descend abruptly, rocky N. slope.
- 31.00 Dry canon, about 250 ft. below top of mesa, course S. 70° E. Ascend abruptly.
- 35.00 Top of canon wall, about 50 ft. above canon. Thence over gently rolling land.
- 40.00 Set an iron post 3 ft. long, 1 in. in dia., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap mkd.

$$\begin{array}{c} \frac{1}{4} \\ \hline S \ 1 \quad | \quad S \ 6 \\ 1912 \end{array}$$

dig pits .18 x .18 x 12 ins. N. and S. of post 3 ft. dist.; raise a mound of earth 3½ ft. base, 1½ ft. high W. of cor.
- 68.30 Descend N. slope.
- 80.00 Set temporary cor. of Tps. 21 and 22 S., Rs. 12 and 13 E. Note: This corner afterward made permanent at 80.00 chs. in the survey of the N. bdy. of this Tp.
- Land, mountainous; surface rocky in S. 35.00 chs. Land gently rolling in N. 45.00 chs.
- Soil, light, fine, dry, warm, sandy loam, of good texture, shallow on bedrock in S. 35 chs., and not suited to cultivation; 10 to 20 ins. deep, on clay subsoil in N. 45 chs. and suited to cultivation if watered.
- The entire mile affords good grazing.
- Timber, scrub cedar and pinon; undergrowth, low shadscale

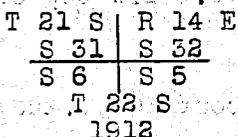
WEST BOUNDARY OF T.22 S., R.13 E.

Chains.

and salt sage.
Instrument in transit at noon prevents lat. observation.
October 24, 1912.

NORTH BOUNDARY OF T.22 S., R.14 E.

Sept. 23, 1912, I go to the old cor. of secs. 5, 6, 31, and 32 on N. bdy. of Tp. 22 S., R. 14 E., which is a limestone 40 x 12 x 8 ins., set firmly in earth and mound of stone, mkd. with 5 grooves on E. and 1 groove on W. face. I destroy all trace of this old cor., and replace it with an iron post 3 ft. long, 3 ins. in dia., set 24 ins. in the ground, for re-established cor. of secs. 5, 6, 31 and 32, with brass cap mkd.



raise a mound of stone, 3 ft. base, 3 ft. high W. of cor.
Sept. 23, 1912: At this cor. at 3h 20m p.m. l.m.t., I set off 38° 56.5' N. on the lat. arc, 0° 11' S. on the decl. arc; and determine a meridian with the solar. Thence I run West on a random line bet. secs. 6 and 31,

40.00 . Set temp. $\frac{1}{4}$ sec. cor.
Instrument in transit at noon prevents lat. observation.
Sept. 23, 1912.

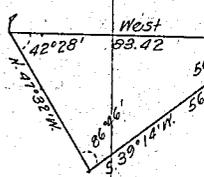
Sept. 30, 1912: It being impossible to chain west from above temp. $\frac{1}{4}$ sec. cor., I go to a point 5.48 chs. west of re-established cor. of secs. 5, 6, 31, and 32 on N. bdy. of T. 22 S., R. 14 E. From this point West on line I set a flag near point for Tp. corner. I also set another flag on line as far west as I can see, and another flag N. 82° 49' W., on top of reef where it can be seen from the W. side of reef. This is the only point at which a flag can be seen from both sides of San Rafael Reef.

NORTH BOUNDARY OF T.22 S., R. 14 E.

Chains.

I now lay off a base S.39°14'W.56.41 chs.in length, making an angle with the line of 50°46'. From S.end of base the flag to the west, near Tp.cor., bears N.47°32'W., making an angle with the base of 86°46'; by computation the angle at the flag is 42°28'

log. 56.41 chs. equals	1.751356
log.sin.86°46'	9.999308
	<hr/>
log.sin.42°28'	9.829407
log. 83.42 chs.	1.921257

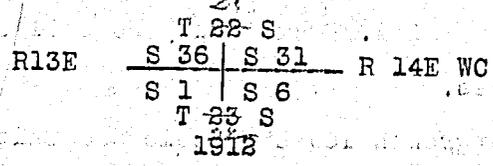


83.42 chs.plus 5.48 chs.equals

88.90 Distance to flag to which triangulation was made.

78.39 Intersect N.and S.line 60 lks.N.of temp.cor.of Tps.21 and 22 S., Rs.13 and 14 E.

As point of intersection falls on a steep sandstone slope, where it would be impossible to set a corner, I mark point of intefsection with a cross (X), and at a point 10.51 chs.S.89°41'W.of true point for cor. Set an iron post, 3 ft.long, 3 ins.in dia., on solid rock, in a mound of stone, 4 ft.base, 2 ft.high for witness cor.to cor.of Tps.21 and 22 S., Rs.13 and 14 E. with brass cap mkd.



raise a mound of stone, 3 ft.base, 3 ft.high S.of cor. I now establish random line bet.secs.6 and 31 on N.bdy. of Tp.22 S., R.14 E., as true line as follows:

From the re-established cor.of secs.5,6,31 and 32, I run West on true line bet.secs.6 and 31,

Ascending gradually over mountainous land, covered with scattering low undergrowth of shadscale and salt sage.

5.00 Point, about 20 ft.above cor., falls NW.

NORTH BOUNDARY T. 22 S., R. 14 E.

Chains.

Descend.

- 15.50 Dry gulch, about 75 ft. deep, course NE.
- 16.70 Dim wagon road, from San Rafael River to Black Dragon Canon. Ascend over rather steep, smooth E. slope.
- 30.90 Crest of sharp ridge, bears NE. and SW. Descend abruptly over sandstone ledge, 40 ft. high.
- 31.20 Foot of ledge; descend more gradually over NW. slope.
- 40.00 Set an iron post 3 ft. long, 1 in. in dia., only 8 ins. in the ground, on account of underlying rock, in a mound of stone, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor. bet. secs. 6 and 31, with brass cap mkd.

$$\begin{array}{r} \frac{1}{4} \\ \hline S \ 31 \\ \hline S \ 6 \\ 1912 \end{array}$$

- raise a mound of stone, 3 ft. base, 3 ft. high N. of cor.
- 43.20 Dry gulch, about 100 ft. below ridge, course NE. Ascend abruptly over sandstone breaks of San Rafael Reef. Impossible to chain further on this line.
- 78.39 True point for cor. of Tps. ²¹ 22 and ²³ 23 S., Rs. 13 and 14 E. previously determined. Land, rough and mountainous. Surface of E. half mile rather rocky; W. half-mile nearly bare surface rock. Soil, on E. half-mile, stiff, gravelly clay, shallow, and of poor quality, not suited to cultivation, but affords some grazing. Practically no soil on W. half-mile; worthless. No timber; undergrowth low shadscale and salt sage on E. half-mile.

Sept. 30, 1912!

It being impossible to chain or carry a transit west from the W.C. to Tps. 21 and 22 S., Rs. 13 and 14 E., I proceed as follows:

Oct. 1, 1912: I go to a point 5.48 chs. W. of the re-estab-

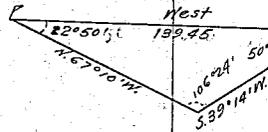
NORTH BOUNDARY OF T.22 S., R.13 E.

Chains.

lished cor. of secs. 5, 6, 31 and 32, on N. bdy. of Tp. 22 S., R. 14 E., and with the same base used in triangulation to witness Tp. cor., Sept. 30, 1912, which is S. 39° 14' W. 56.41 chs. in length, I triangulate to flags set on top of San Rafael Reef to the west, Sept. 30, 1912, as follows:

From N. end of base flag No. 1 bears W., making an angle with the base of 50° 46'. From S. end of base same flag bears N. 67° 10' W., making an angle with the base of 106° 24'. By computation, the angle at flag is 22° 50'.

log. 56.41 chs.	equals	1.751356
log. sin. 106° 24'	"	9.981961
log. sin. 22° 50'	"	9.588890
log. 139.45 chs.	"	2.144487



139.45 plus 5.48, minus 78.39 equals 66.54 chs., distance from true point for cor. of Tps. 21 and 22 S., Rs. 13 and 14 E. west to flag.

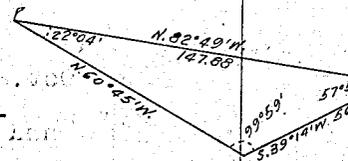
It is impossible to chain west from this flag, nor to see it from any accessible place to the west.

Triangulation to Flag No. 2.

From N. end of base, Flag No. 2 bears N. 82° 49' W., making an angle with the base of 57° 57'.

From S. end of base, same flag bears N. 60° 45' W., making an angle with the base of 99° 59'. By computation, the angle at the flag is 22° 04'.

log. 56.41 chs.	equals	1.751356
log. sin. 99° 59'	"	9.993374
log. sin. 22° 04'	"	9.574824
log. 147.88 chs.	"	2.169906



NORTH BOUNDARY OF T.22 S., R.13 E.

Chains.

By computation, Flag No.2 is west 73.81 chs., and north 18.49 chs. from true point for cor. of Tps. 21 and 22 S., Rs. 13 and 14 E.

It is impossible to chain, or to carry transit line west from this point.

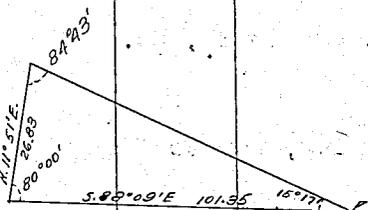
October 1, 1912.

Oct. 3, 1912: I now go to a point on W. side of San Rafael Reef, as near to line as it is possible for me to see my flag to the east. Here at 10h 0 m a.m.l.m.t., I set off $38^{\circ} 56.5'$ N. on the lat. arc; $3^{\circ} 59'$ S. on the decl. arc; and determine a meridian with the solar.

I now lay off a base N. $11^{\circ} 51'$ E. 26.83 chs. in length. From S. end of base flag No. 2, on top of San Rafael Reef bears S. $88^{\circ} 09'$ E., making an angle with the base of $80^{\circ} 00'$. From N. end of base same flag bears S. $72^{\circ} 52'$ E., making an angle with the base of $84^{\circ} 43'$

By computation, angle at flag is $15^{\circ} 17'$

log. 26.83 chs.	equals	1.428621 ✓
log. sin. $84^{\circ} 43'$	"	9.998151 ✓
		<hr/>
		1.426772 ✓
log. sin. $15^{\circ} 17'$	"	9.420933 ✓
log. 101.35 chs.	"	2.005839 ✓



By computation, flag is E. 101.30 chs., and S. 3.27 chs. which makes point from which triangulation was made west 175.11 chs., and N. 21.76 chs. from true point for cor. of Tps. 21 and 22 S., Rs. 13 and 14 E.

October 3, 1912.

Oct. 25, 1912: I go to the temp. point 175.11 chs. west, and 21.76 chs. N. of Tp. cor., which I established on Oct. 3. Here at 8h 30m a.m.l.m.t., I deflect from solar line established Oct. 3, 1912, and run S. 21.76 chs. to my random line. Thence I run east 15.11 chs., and set temp. cor. of secs. 2, 3, 34, and 35. I now continue west on random line along N. bdy. of Tp., setting temp. $\frac{1}{4}$ sec.

NORTH BOUNDARY OF T. 22 S., R. 13 E.

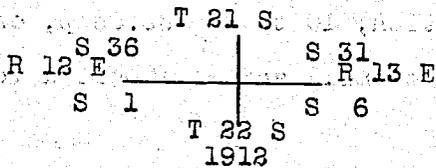
Chains.

and sec.cors. at intervals of 40.00 chs.; and at 482.53 chs.fall 2.70 chs.N.of temp.cor.of Tps.21 and 22 S., Rs.12 and 13 E. This falling answers to a correction of 19' or 45 lks.S.per mile, counting from the NE.cor.of the Tp.

October 25, 1912.

Nov. 2, 1912: I establish temp.corner of Tps.21 and 22 S., Rs.12 and 13 E.as follows:

Set an iron post 3.ft.long, 3 ins.in dia., 24 ins.in the ground, for cor.of Tps.21 and 22 S., Rs.12 and 13 E., with brass cap mkd.



raise a mound of stone, 3 ft.base, 3 ft.high S'of cor.

Thence I run

N.89°41'E.on true line along N.bdy.of township

Bet.secs.6 and 31

Ascending gradually over rolling land; through heavy cedar and pinon timber and scattering low undergrowth of shadscale and salt sage.

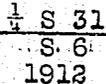
16.70 Descend gradually.

18.00 Dry gulch, course N. Ascend.

20.00 Low point falls N.; descend gradually.

25.00 Hollow drains NW; Ascend gradually.

42.53 Set an iron post 3 ft.long, 1 in.in dia., 26 ins.in the ground, for 1/4 sec.cor., with brass cap mkd.



raise a mound of stone, 2 ft.base, 1 1/2 ft.high N.of cor.

Corner stands on SW.slope of knoll.

Ascend more abruptly.

44.00 Top of knoll, about 75 ft.high;descend gradually.

50.00 Descend abruptly over sandstone ledges.

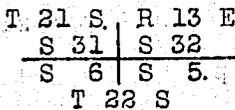
53.00 Foot of knoll. Descend very gradually across flat, draining SE.

NORTH BOUNDARY OF TP. 22 S., R. 13 E.

Chains.

Leave timber bears N. and S.

82.53 Set an iron post 3 ft. long, 3 ins. in dia., 24 ins. in the ground, for cor. of secs. 5, 6, 31 and 32, with brass cap mkd.



1912

raise a mound of stone 2 ft. base, 2 ft. high W. of cor. Land, rolling; surface covered with numerous sandstone boulders in west 53.00 chs.

Soil, light, fine, dry, warm, sandy loam, of good texture, rather shallow on bedrock in W. 53.00 chs., not suited to cultivation; 10 to 20 ins. deep, on clay subsoil in remainder of mile and well suited to cultivation if watered.

Good grazing throughout the mile.

Timber, scrub cedar and pinon.

Undergrowth, shadscale and salt sage.

N. 89° 41' E. bet. secs. 5 and 32,

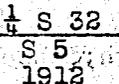
Ascending gradually over SW. slope, over rolling mountainous land; through scattering undergrowth of shadscale and salt sage.

4.00 Top of low bench, bearing NW. and E.

Descend gradually along bench; through scattering cedar and pinon timber.

38.00 Dry gulch, course NE. Ascend.

40.00 Set an iron post 3 ft. long, 1 in. in dia., only 10 ins. in the ground, on account of underlying rock, supported by a mound of stone, 4 ft. base, 2 ft. high for 1/4 sec. cor., with brass cap mkd.



raise a mound of stone, 3 ft. base, 2 ft. high N. of cor.

48.00 Ascend abruptly over NW. slope, from base of point.

Chains

- 53.00 Top of point, 110 ft. high, falls N.; descend abruptly.
- 65.00 Foot of point, 100 ft. below top; bears N. and S.; descend very gradually.
- 80.00 Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins. in the ground, for cor. of secs. 4, 5, 32 and 33, with brass cap, mkd.

T 21 S	R 13 E
S 32	S 33
S 5	S 4
T 22 S	
1912	

raise a mound of stone, 2 ft. base, 2 ft. high, W. of cor. Land, rolling mountainous. Surface covered with numerous sandstone boulders.

Soil, light, fine; dry, warm, sandy loam of good texture, shallow on bedrock in W. 3/4 mile; 12 to 24 ins. deep on clay subsoil in E. 1/2 mile. Adapted to cultivation, if watered, in E. 15.00 chs.

Soil too shallow in W. 3/4 mile to permit of cultivation. Good grazing throughout the mile.

Timber, scrub cedar and pinon; undergrowth; low shadscale and salt sage.

N. 39° 41' E. bet. secs. 4 and 33; descending gradually over rolling land, through considerable cedar and pinon timber, and scattering low undergrowth of shadscale and salt sage.

- 16.10 Descend gradually over small, broken sandstone point and canons draining E., almost solid surface rock.
- 40.00 Set a limestone 16 x 12 x 6 ins., on surface rock, surrounded by a substantial mound of stone; for 1/2 sec. cor., mkd. 186 on NE and 1912 on S. face; raise a mound of stone, 3 ft. base; 2 ft. high, N. of cor. No iron post available.
- 73.00 Descend abruptly over rock wall of canon. Leave timber.
- 75.00 Dry canon, about 75 ft. deep, course NE.; ascend abruptly.
- 80.00 Set an iron post, 3 ft. long, 3 ins. in diam., on solid rock, surrounded by a mound of stone, 4 ft. base, 2 1/2 ft. high, for cor. of secs. 33 and 34, with brass cap, mkd.

Chains

T 21 S	R 13 E
S 33	S 34

T 22 S
1912

raise a mound of stone, 4 ft. base, 3 ft. high, W. of cor. Corner stands on edge of canon, about 70 ft. above bottom. Land, broken rolling; general E. exposure. Surface covered with sandstone boulders, with much surface rock in E.

64.00 chs.

Soil, in W. 16 chs., light, fine, dry, warm, sandy loam of good texture, 8 to 20 ins. deep on clay subsoil; suited to cultivation if watered and afford good grazing. Practical no soil in E. 64 chs.

Timber, scrub cedar and pinon; undergrowth, low shadscale and salt sage.

N. 89° 41' E. bet. secs. 3 and 34; ascending gradually over rolling mountainous land, through scattering cedar and pinon timber and scattering low undergrowth of shadscale and salt sage.

3.20 Foot of mesa, bears N. and S.; ascend abruptly W. slope.

9.00 Top of mesa, about 130 ft. above sec. cor., bears N. and S. Thence across rolling mesa.

33.00 Edge of mesa, bears NW. and SE.; descend abruptly NE. slope

40.00 Set a limestone 18 x 12 x 6 ins., 12 ins. in the ground, for $\frac{1}{2}$ sec. cor., mkd. $\frac{1}{2}$ S on N., and 1912 on S. face; raise a mound of stone, 2 $\frac{1}{2}$ ft. base, 2 ft. high, N. of cor. Corner stands at foot of mesa, about 150 ft. below top. No iron post available. Descend gradually.

52.00 Foot of mesa, bears NE. and SW.; ascend abruptly NW. slope.

63.20 Top of mesa, about 100 ft. high, bears NE. and SW. Thence across rolling mesa.

80.00 Set an iron post, 3 ft. long, 3 ins. in diam., 24 ins. in the ground, for cor. of secs. 34 and 35, with brass cap, mkd.

Chains

T 21 S	R 13 E
S 34	S 35
T 22 S	
1912	

raise a mound of stone, 2 ft. base, 2 ft. high, W. of cor.
Land, rolling mountainous.

Soil, light, fine, dry, warm, sandy loam, rich in lime,
8 to 20 ins. deep on clay subsoil; suited to cultivation
if watered on the gentler slopes, and affords good grazing.
Timber, scrub cedar and pinon; undergrowth, low shadscale
and salt sage.

N. 89° 41' E. bet. secs. 2 and 35.

Ascend gradually over rolling mesa, through scattering
cedar and pinon timber and scattering low undergrowth of
shadscale and salt sage.

17.00 Foot of San Rafael Reef, bears N. 20° W. and S. 20° E.

Ascend very abruptly precipitous slope of reef, over huge
ledges of bare sandstone; no vegetation.

40.00 Point for $\frac{1}{4}$ sec. cor., inaccessible.

80.00 Point for cor. of secs. 35 and 36, inaccessible.

I therefore perpetuate this cor. as follows: at

93.46 Set an iron post, 3 ft. long, 3 ins. in diam., on surface
rock, surrounded by a mound of stone, 4 ft. base, 2 $\frac{1}{2}$ ft.
high, for witness to cor. of secs. 35 and 36, with
brass cap, mkd.

WC	T 21 S	R 13 E
	S 35	S 36
	T 22 S	
	1912	

raise a mound of stone, 4 ft. base, 2 ft. high, W. of cor.
Land, rolling in W. 17 chs.; remainder rough and
mountainous on precipitous slopes of San Rafael Reef.

Surface of W. 17 chs., covered with sandstone boulders;
remainder of mile, solid sandstone. General W. exposure.

Soil, in W. 17 chs., light, fine, dry, warm, sandy loam,
6 to 20 ins. deep on clay subsoil; too rocky to permit
of cultivation, but affords good grazing.

No soil in remainder of mile.

Chains

Timber, scrub cedar and pinon; undergrowth, low shadscale and salt sage.

N. 89° 41' E. bet. secs. 1 and 36, from true point for cor.

Ascending abruptly precipitous W. slope of San Rafael Reef, over huge sandstone ledges; no vegetation.

13.46 Witness cor. to secs. 35 and 36, previously described.

Descend very abruptly E. face of reef, over solid sandstone, cut by deep canons with perpendicular rock walls.

No vegetation.

40.00 Point for $\frac{1}{4}$ sec. cor., inaccessible.

69.49 Witness to cor. of Tps. 21 and 22 S., Rs. 13 and 14 E., previously described.

80.00 True point for cor. of Tps. 21 and 22 S., Rs. 13 and 14 E., previously determined. Cor. not set.

Land, very rough and mountainous on precipitous, broken E. slopes.

Surface, solid sandstone, cut by canons.

No soil.

No vegetation; totally worthless.

Instrument in transit at noon prevents lat. obsn.

Nov. 2, 1912.

General Description.

The lands in this Tp. consist of the very rough, rock breaks of San Rafael Reef and Swell, which is totally worthless, in the eastern portion; with a little agriculture and grazing land in the extreme SE. and along the E. bdy. The western and northern portions of the Tp. lie nearly on top of San Rafael Swell, and are nearly all good grazing land, with considerable land that is adapted to cultivation if watered, and might possibly be dry farmed.

Robert E. Clark
U. S. Transitman.

Boundaries of T.22 S., R.13 E.

Latitudes, Departures, and Closing Errors.

Lines Designated	True Bearing	Dist. chs.	Latitudes, Departures.			
			N. chs.	S. chs.	F. chs.	W. chs.
East Boundary	N. 0°37'E.	84.10	84.10	.....	0.91	.....
	N. 0°04'W.	39.92	39.92	.....	.....	0.05
	N. 0°07'W.	39.92	39.92	.....	.....	0.08
	N. 0°24'W.	39.50	39.50	.....	.....	0.28
	N. 0°28'E.	40.00	40.00	.....	0.33	.....
	N. 0°08'E.	119.62	119.62	.....	0.29	.....
North Boundary	N. 0°39'W.	38.92	38.92	.....	.....	0.44
	North	80.60	80.60	.....	.....	.....
West Boundary	S.89°41'W.	482.53	.....	2.67	.....	482.53
South Boundary	South	480.00	.....	480.00	.....	.....
South Boundary	N.89°59'E.	482.40	0.13	.....	482.40	.....
Convergency						0.59
T o t a l s			482.71	482.67	483.93	483.97
Errors in lat. and dep.			482.67		483.93	483.93
			0.04			0.04

Note:

Stone corners were set bet. secs. 3 and 34, and 4 and 33, for the reason that I had no iron posts nearer than San Rafael River, and it would have taken two days to get them. I found that I was able to run two miles more of the subdivision than I had expected, and was therefore short on posts. The stones set were very hard and durable, and will last fully as long as an iron post would.

Robert E. Clark

U.S. Transitman.

Blank

Page

CERTIFICATE OF ASSISTANTS.

We, the undersigned, hereby certify upon honor that we assisted, to the best of our skill and ability, _____, U. S. Surveyor, during the periods and in the capacities stated opposite our several signatures, in surveying all those parts or portions of _____

For certificates of assistants see book "D" T.23 S., R 13 E. and book "F" T.20 S., R.15 E.

of the _____ Meridian, in the State of _____ which are represented in the foregoing field notes as having been executed by him, and under his direction; and that said survey has been, in all respects, to the best of our knowledge and belief, well and faithfully executed.

NAME

PERIOD OF SERVICE

CAPACITY.

Began.

Ended.

Subscribed and certified to before me on the date of the final service as shown above.

FINAL OATH OF UNITED STATES SURVEYOR.

I, _____, U. S. Surveyor, do solemnly swear that, in pursuance of special instructions received from the U. S. Surveyor General for _____ bearing date of the _____ day of _____, 191 _____, I have well, faithfully, and truly, in my own proper person, and in strict conformity with said instructions, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of _____

For final oath of Howard W. Miller, U.S. Surveyor see book "D" T. 23 S. R. 13 E.

For final oath of Robert E. Clark, U.S. Transitman see book "F" T. 20 S. R. 15 E. _____ of the _____

Meridian, in the State of _____, which are represented in the foregoing field notes as having been executed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the U. S. Surveyor General for _____ and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

U. S. Surveyor.

Subscribed by said _____, and sworn to before me } this _____ day of _____, 191 _____



APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, March 8, 191 5.

The foregoing field notes of the ~~xxxxxx~~ retracement and survey of E., resurvey of N. and S., resurvey and survey of W. boundaries Township 24 South, Range 13 East; retracement and resurvey of E., and survey of W. and N. boundaries Township 23 South, Range 13 East; survey of frac'l N. Bdy. Township 22 South, Range 14 East; and retracement and survey of East, and survey of West and North boundaries of Township 22 South, Range 13 East, of the Salt Lake Base and Meridian, Utah

executed by Howard W. Miller and Robert E. Clark under ~~the~~ special instructions dated June 10, 191 2, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the retracements, resurveys and surveys they describe, are hereby approved.

[Signature]
U. S. Surveyor General.

I certify that the foregoing transcript of the field notes of the above-described surveys in _____, has been correctly copied from the original notes on file in this office.

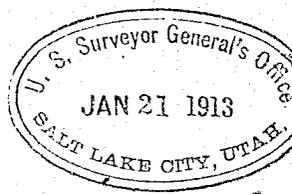
U. S. Surveyor General.

Blank

Page

Blank

Page



Book "C"

FIELD NOTES

Handwritten initials

OF THE SURVEY OF THE

Subdivision of T. 24 S., R. 13 E.

Handwritten notes: J. E. 1891

of the *Salt Lake Base and* Meridian,

In the State of *Utah*

EXECUTED BY

Howard W. Miller

In the capacity of U. S. Surveyor..., under instructions dated *June 10*, 191*2*,

issued by the United States Surveyor General to govern surveys included in

Group No. *18*, which were approved by the Commissioner of the General Land

Office, *by telegram dated June 19*, 191*2*, pursuant to authority contained in the Act of

Congress dated _____, 191*2*

Survey commenced *August 2*, 191*2*

Survey completed *August 24*, 191*2*

INDEX DIAGRAM.

Township 24 south, Range 13 east

6 72	5 70	51 4 50	37 3 37	26 2 25	14 1 13
7 66	67 8 65	48 9 47	35 10 34	24 11 23	12 11
18 63	64 17 62	45 16 44	33 15 32	21 14 20	18 9 9
19 59	60 20 58	43 21 42	31 22 31	19 23 18	24 7 5
30 56	57 29 55	41 28 40	30 27 29	17 26 16	25 4 3
31 54	32	39 33	28 34	15 35	2 36

Subdivision of T. 24 S., R. 13 E.

chains.

Survey commenced August 2, 1912 and executed with a W. and L. E. Gurley solar compass No. 1043. For description and test of instrument see book "A" of this survey.

I examine the adjustments of the compass and correct the level and collimation errors; then, to test the solar apparatus, by comparing its indications, resulting from solar observations made during p.m. and a.m. hours, with a true meridian determined by observations on Polaris, I proceed as follows:

At the cor. of secs. 1, 2, 35 and 36 on the S. bdy. of the tp., in lat. $38^{\circ}40'49''$ N., longitude $110^{\circ}28'25''$ W., I set off $38^{\circ}41'$ on the lat. arc; $17^{\circ}41'$ N., on the decl. arc; and at $5^{\text{h.}}06^{\text{m.}}$ p.m. l.m.t., determine with the solar a meridian; and mark a point thereof, on a stone firmly set in the ground, 5 chs. N. of the cor. At $10^{\text{h.}}47.3^{\text{m.}}$ by my watch which carries correct l.m.t., I observe Polaris at eastern elongation in accordance with the Manual of Instructions and mark a point in the line thus determined on a peg, driven firmly in the ground, 5 chs. N. of the cor.

August 2, 1912

August 3: At $6^{\text{h.}}45^{\text{m.}}$ a.m. l.m.t., I lay off the azimuth of Polaris $1^{\circ}30'$ to the west, and mark the true meridian thus determined, by cutting a small groove in the stone set August 2; on which the true meridian falls 0.4 ins. east of the

Subdivision of T. 24 S., R. 13 E.

chain

mark determined by the solar.
At 7^h 06^m a.m. l.m.t., I set off $38^{\circ} 41'$ on the lat. arc; $17^{\circ} 33' N.$, on the decl. arc; and mark a point in the true meridian determined with the solar, by a cross on the stone already set, 5 chs. N. of my station; this mark falls 0.3 ins. East of the true meridian established by the Polaris observations.

The solar apparatus by p.m. and a.m. observations, defines positions for true meridians, respectively $0^{\circ} 21''$ west and $0^{\circ} 16''$ east of the meridian established by the Polaris observations. therefore, I conclude that the adjustments of the instrument are satisfactory.

The magnetic bearing of the true meridian at 7^h 15^m a.m. is $N. 15^{\circ} 45' W.$, the angle thus determined gives the magnetic decl. $15^{\circ} 45' E.$

I commence at the cor. of secs. 1, 2, 35 and 36 on the S. bdy. of the tp. heretofore described.

Having retraced the east boundary of this tp., and having found that it deviates more than $21'$ of arc from a true meridian; I surveyed said boundary setting cors. referring to T. 24 S., R. 13 E. upon it. It is now necessary to run a sectional guide meridian through the first tier of secs. in this tp., I therefore run

North, on sectional guide meridian bet. secs. 35 and 36.

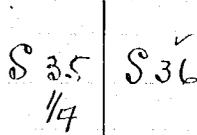
Over rolling sandy land sloping S., through short undergrowth of shade scale

Subdivision of T. 24 S., R. 13 E.

Chaus.

40.00

Gradually ascend.
Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

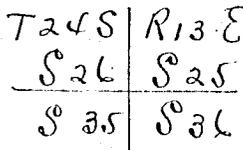


1912

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high W. of cor.

80.00

Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 25, 26, 35 and 36, with brass cap marked.



1912

dig pits, 18 x 18 x 12 ins., in each sec., $5\frac{1}{2}$ ft. dist.; raise a mound of earth, 4 ft. base, 2 ft. high W. of cor.

Land, rolling with a general S. drain.

Soil, sandy and gravelly; 3rd. rate sub-soil, hard sand, gravel and some gypsum.

Undergrowth, short shadscale.

No timber.

Good grass for grazing.

40.00

80.18

East, on random line bet. secs. 25 and 36.

Set temporary $\frac{1}{4}$ sec. cor.

Intersect E. bdy. of the tp. at the cor. of secs. 25 and 36 heretofore described. Thence I run

West, on true line bet. secs. 25 and 36.

Over hilly land draining NE.

Sub-division of T. 24 S., R. 13 E.

Chains

- through short undergrowth of shade-
scale
 7.70 Ascend 30 ft. to
 Hollow, drains NE.
 11.00 Gradually ascend 50 ft. to
 Spur, projects S.
 Thence over rolling hills.
 110.00 Set an iron post, 3 ft. long, 1 in. in
 dia., 24 in. in the ground for $\frac{1}{4}$
 sec. cor., with brass cap marked
 S 25
 1/4
 S 36
 1912
 dig pits, 18 x 18 x 12 in.; E. and W.
 of post, 3 ft. dist., raise a mound
 of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N.
 of cor.
 51.00 Leave hilly land, bears NE. and SW.
 Thence over rolling land sloping
 gently south.
 80.18 The cor. of secs. 25, 26, 35 and 36.
 Land, hilly and rolling.
 E. 51 chs. hilly land, with a general
 NE. drain. W. 29.18 chs. rolling land
 draining S.
 Soil, gravelly, gypsum and sandy;
 3rd. rate.
 Sub-soil, hard sand, gravel and
 gypsum.
 No timber.
 Undergrowth, short shade-
 scale.
 Good grass for grazing.
 August 3: At this sec. cor., I set off
 $17^{\circ} 28'$ N., on the decl. arc; and at
 $12^{\text{h}} 06^{\text{m}}$ p.m. l. m. t., observe the
 sun on the meridian; the resulting
 lat. is $38^{\circ} 42'$
-
- North, on sectional guide meridian

Subdivision of T. 24 S., R. 13 E.

Chains

bet. secs. 25 and 26.

Over rolling land sloping gently S., through short undergrowth of shadscale.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked.

S 26	S 25
$\frac{1}{4}$	

1912

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high W. of cor.

74.00 Leave rolling land, enter hilly land, bears NW. and SE.

Ascend

80.00 Set an iron post, 3 ft. long, 2 in. in dia., 24 ins. in the ground for cor. of secs. 23, 24, 25 and 26, with brass cap marked.

T 24 S	R 13 E
S 23	S 24
S 26	S 25

1912

dig pits, 18 x 18 x 12 ins., in each sec., $5\frac{1}{2}$ ft. dist., raise a mound of earth $4\frac{1}{2}$ ft. base, 2 ft. high W. of cor. Land, rolling and hilly with a general S. drain.

Soil, gravelly, sandy and clay; 3rd. rate.

Sub-soil, clay, gypsum and shale. No timber.

Undergrowth, short shadscale.

Good grass for grazing.
Hilly land on N. 6 chs.

East, on random line, bet. secs.

Subdivision of T. 24 S., R. 13 E.

Chains.

- 24 and 25
- 40.00 Set temporary $\frac{1}{4}$ sec. cor.
- 80.37 Intersect E. bdy. of the xp 7 lks. $N. 0^{\circ} 09' E.$, of the cor. of secs. 24 and 25 heretofore described.
Thence I run
 $N. 89^{\circ} 57' W.$, on true line bet. secs. 24 and 25.
Over broken land, through short undergrowth of shadeless at base of rocky breaks.
- 23.30 Wash in hollow, 50 lks. wide, drains NE.
Crows Nest Spring, 6 ft. in dia., 2 ins. deep, alkali water, bears N. 30 lks.
Enter rocky breaks, bears NW. and SE.
Ascend abruptly.
- 25.00 A tunnel about 100 ft. long bears N. 1 ch.
- 30.40 Spur and edge of breaks, from NW. bears NE., 60 ft. above hollow.
Descend
- 34.40 Hollow, 40 ft. deep, drains SE.
Ascend 50 ft. to
- 39.00 Spur, projects NE.
Descend.
- 110.18 $\frac{1}{2}$ Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked
S 24
1/4
S 25
1912
- raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.
Note: On account of natural obstacles, I am unable to set post in the ground.
- 140.70 Hollow, drains NE.
Ascend 30 ft. to

Subdivision of T. 24 S., R. 13 E.

Chains	
43.60	Top of west side of hollow, bears N. and S. Thence gradually descend over land sloping nearly N.
57.40	Wash in hollow, 15 lks. wide, 20 ft. deep, drains N. Ascend 40 ft. to
79.30	Low spur, projects S. Descend.
80.37	The cor. of secs. 23, 24, 25 and 26. Land, mountainous, with a general N. drain. Soil, rocky, gravelly and gypsum; 3rd. rate. Sub-soil, rocky. No timber. Undergrowth, short shadscale. Mountainous land. 80.37 chs. August 3, 1912.

August 6: At 7^{h.} 36^{m.} a.m. l.m.t., I set off $38^{\circ} 43'$ on the lat. arc; $16^{\circ} 44'$ N., on the decl. arc; and determine a meridian with the solar at the cor. of secs. 23, 24, 25 and 26.

Thence I run North, on sectional guide meridian bet. secs. 23 and 24.

Over rolling mountainous land through short undergrowth of shadscale.

Gradually ascend.

18.00 Top of ridge, bears E. and W.
Gradually descend.

29.80 Descend abruptly 50 ft. to

34.50 Wash in hollow, 15 lks. wide, drains NE.

Ascend 50 ft. to

38.50 Spur, projects E.
Descend 30 ft. to

Subdivision of T. 24 S., R. 13 E.

Chans.

39.50 Wash in hollow, 10 lks. wide,
drains E.

Ascend

40.00 Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in a mound of stone
and earth, 4 ft. base, 2 ft. high for
1/4 sec. cor., with brass cap marked

S 23	S 24
1/4	

1912

raise a mound of stone, 2 ft. base,
1 1/2 ft. high W. of cor.

Note: On account of natural obstacles
I am unable to set post in the
ground.

41.70 Top of ridge and edge of rock breaks
bears NW. and SE.

Descend 100 ft. to

70.00 Base of breaks; bears NW. and SE.
Enter sandy land sloping almost E.

80.00 Set an iron post, 3 ft. long, 2 ins.
in dia., 24 ins. in the ground for
cor. of secs. 13, 14, 23 and 24, with
brass cap marked

T 24 S	R 13 E
--------	--------

S 14	S 13
------	------

S 23	S 24
------	------

1912

dig pits, 18 x 18 x 12 ins., in each sec.,
5 1/2 ft. dist., raise a mound of earth,
4 ft. base, 2 ft. high, W. of cor.
Land, mount aimous and rolling
draining NE.

Soil, gravelly, rocky and sandy; 4th
rate.

Sub-soil, rocky and sandy.

No timber.

Undergrowth, short shadscale.

Good grass for grazing on N. 40 lbs.

Subdivision of T. 24 S., R. 13 E.

chauss.

Mountainous land on S. 70 chs.

S. 89° 57' E., on random line bet. sees. 13 and 24.

40.00 Set temporary 1/4 sec. cor. ✓

80.65 Intersect E. bdy. of the tp. 9 lks. S. 0° 36' W. of the cor. of sees. 13 and 24 heretofore described.

Thence I run

S. 89° 59' W., on true line bet. sees. 13 and 24.

Over rolling sandy land draining E., through undergrowth of greasewood and short shadscale.

40.00 Wash, 60 lks. wide, 5 ft. deep, drains NE.

Ascend towards rocky breaks.

40.65 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

S 13 ✓
1/4

S 24

1912

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high N. of cor.

Note: Cor. is situated on deep loose sand.

80.65 The cor. of sees. 13, 14, 23 and 24.

Land, rolling.

Soil, sandy; 3 rd. rate.

Sub-soil, deep sand.

No timber.

Undergrowth, short shadscale and greasewood.

Good grass for grazing.

North, on sectional guide meridian,

Subdivision of T. 24 S., R. 13 E.

chains

bet. secs. 13 and 14.

Over rolling sandy land draining E., through undergrowth of short shadscale and greasewood.

Gradually descend.

10.00 Hollow, 30 ft. deep, drains E.

Ascend 30 ft. to

13.80 Low ridge, bears E. and W.

Descend 40 ft. to

18.00 Hollow, drains NE.

Gradually ascend.

38.00 Spur, projects NE.

Gradually descend.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S 14	S 13
$\frac{1}{4}$	

1912

dig pits, 18 x 18 x 12 ins., N. and S. of post 3 ft. dist., raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high W. of cor.

57.00 Wash in hollow, 75 lbs. wide, 40 ft. below $\frac{1}{4}$ sec. cor., drains E.

Gradually ascend over land facing S.

80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 11, 12, 13 and 14, with brass cap marked

T 24 S	R 13 E
S 11	S 12
S 14	S 13

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.

Note: On account of natural obstacles,

Subdivision of T. 24 S., R. 13 E.

chain.

I am unable to set post in the ground.

Land, rolling, with a general E. drain.

Soil, deep sand. 3rd. rate.

Sub-soil sand and some rocks.

No timber.

Undergrowth, short shade-leaf and greasewood.

Good grass for grazing.

August 6: At this sec. cor., I set off $16^{\circ} 40' N.$, on the decl. arc; and at $12^{\text{h}} 06^{\text{m}}$ p.m. l.m. t., observe the sun on the meridian; the resulting lat. is $38^{\circ} 44'$

$N. 89^{\circ} 59' E.$, on random line bet. sec. 12 and 13.

40.00 Set temporary $\frac{1}{4}$ sec. cor.

81.03 Intersect E. bdy. of the $\frac{1}{4}$ sec. S. of NW of the cor. of sec. 12 and 13 heretofore described.

Thence I run

$N. 89^{\circ} 55' W.$, on true line bet. sec. 12 and 13.

Over rolling sandy land sloping S., through short undergrowth of shade-leaf and greasewood.

41.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

$S 12$
 $\frac{1}{4}$

 $S 13$

1912

dig pits, $18 \times 18 \times 12$ ins., E. and W. of post, 3 ft. dist., raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.

81.03 The cor. of sec. 11, 12, 13 and 14.

Subdivision of T. 24 S., R. 13 E.

Chaus.

Land, rolling with a southerly drain.

Soil, sandy; 3rd. rate.

Sub-soil, hard dry sand and gravel.

No timber.

Undergrowth, short shadscale and greasewood.

Good grass for grazing.

North, on sectional guide meridian bet. secs. 11 and 12.

Over rolling sandy land sloping south, through short undergrowth of shadscale.

Gradually ascend

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S 11	S 12
$\frac{1}{4}$	

1912

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., raise a mound of earth, 3 $\frac{1}{2}$ ft. base, 1 $\frac{1}{2}$ ft. high W. of cor.

60.00 Top of south side of flat sandy bench, bears NE. and SW.

Thence across bench.

80.00 Set an iron post, 3 ft. long, 2 in. in dia., 24 ins. in the ground for cor. of secs. 1, 2, 11 and 12 with brass cap marked

T 24 S	R 13 E
S 2	S 1
S 11	S 12

1912

dig pits, 18 x 18 x 12 ins., in each sec, 5 $\frac{1}{2}$ ft. dist., raise a mound of earth, 4 ft. base, 2 ft. high W. of cor.

Subdivision of T. 24 S., R. 13 E.

Chaus.

Land, rolling, with a general S. grain.

Soil, sandy; 3 rd. rate.

Sub-soil, hard dry sand and gravel.

No timber.

Undergrowth, short shadscale.

Good grass for grazing.

August 6, 1912

August 9: At 8^h. 05^m. a.m. l.m.t., I set off 38° 45' on the lat. arc; 15° 52' N., on the decl. arc; and determine a meridian with the solar at the cor. of secs. 1, 2, 11 and 12.

Thence I run

S. 89° 58' E., on random line bet. secs. 1 and 12.

110.00 Set temporary 1/4 sec. cor. ↓

81.65 Intersect E. bdy. of the tp. 3 lks. S 0° 14' W of the cor. of secs. 1 and 12 heretofore described.

Thence I run

N. 89° 59' W., on true line bet. secs. 1 and 12.

Over rolling sandy land, through short undergrowth of shadscale and greasewood.

15.00 Ascend 40 ft. over land facing E. to top of south side of sandy bench, bears N.E. and S.W.

Thence over nearly level land,

41.65 Set an iron post, 3 ft. long; 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

S 1 ✓

1/4

S 12

1912

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist, raise a mound

Subdivision of T. 24 S., R. 13 E.

Chains

of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.

81.65 The cor. of secs. 1, 2, 11 and 12.

Land rolling and nearly level.

Soil, deep sand; 3rd. rate.

Sub-soil, sand.

No timber.

Undergrowth, short shadscale and greasewood.

Good grass for grazing.

Having re surveyed the north and east boundaries of this tp, and knowing that closing cor. will be necessary upon the north boundary, I run North, on sectional guide meridian bet. secs. 1 and 2.

Over gently rolling sandy bench land, through short undergrowth of shadscale.

5.00 Leave bench, bears NE. and SW.

Thence descend over broken land sloping NW.

10.00 140 ft. below bench.

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S 2	S 1
$\frac{1}{4}$	
1912	

dig pits, $18 \times 18 \times 12$ ins., N. and S. of post, 3 ft. dist.; raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high, W. of cor..

15.00 Wash in hollow, 40 lbs. wide, drains NE.

54.50 Ascend 50 ft. to spur, projects NE.
Descend 30 ft. to

Subdivision of T. 24 S., R. 13 E.

Chains.

57.00 Hollow, drains NE.

Ascend 30 ft. to

60.00 Spur, projects NE.

Descend

63.00 Leave broken land, enter rolling land sloping N., bears E. and W.

89.55 Intersect N. bdy. of the tp. 4.54 chs., West of the cor. of secs. 1, 2, 35 and 36, heretofore described.

Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for closing cor. of secs. 1 and 2 with brass cap marked

T 23 S R 13 E ✓
 S 35 cc | S 36
 S 2 | S 1
 T 24 S
 1912

dig pits, 24 x 18 x 12 ins., crosswise on each line, E. and W., 3 ft., and S. of post, 7 ft. dist., raise a mound of earth, 4 ft. base, 2 ft. high S. of cor.

Note: I destroy all marks on old cor. pertaining to secs. 1 and 2.

Land, mountainous and rolling with a general N. drain.

Soil, sandy and rocky; 3rd. rate.

Sub-soil, hard sand, gypsum and gravel.

No timber.

Undergrowth, short shadscale.

Good grass for grazing.

Mountainous land 58.00 chs.

August 7: At 7^h. 36^m. a.m. l.m.t., I set off 38° 41' on the lat. arc; 16° 27' N. on the decl. arc; and determine a meridian with the solar at the cor. of secs. 2, 3, 34, 35, on the S. bdy. of

Subdivision of T. 24 S., R. 13 E.

chauss

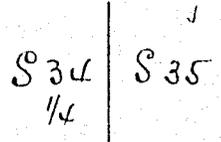
the tp., heretofore described.

Thence I run
N. 0° 01' W., bet. secs. 34 and 35.

Over rolling sandy land sloping S.,
through short undergrowth of shadscale
Gradually ascend.

40.00

Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in the ground for $\frac{1}{4}$
sec. cor., with brass cap marked

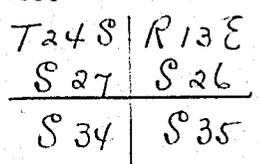


1912

dig pits, 18 x 18 x 12 ins., N. and S. of
post, 3 ft. dist., raise a mound of
earth, 3 $\frac{1}{2}$ ft. base, 1 $\frac{1}{2}$ ft. high W. of cor.

80.00

Set an iron post, 3 ft. long, 2 ins. in
dia., 24 ins. in the ground for cor. of
secs. 26, 27, 34 and 35, with brass
cap marked



1912

dig pits, 18 x 18 x 12 ins., in each sec.,
5 $\frac{1}{2}$ ft. dist., raise a mound of earth,
1 $\frac{1}{2}$ ft. base, 2 ft. high W. of cor.

land rolling draining S.
Soil, sandy, 3rd. rate.
Sub-soil, hard dry sand and gravel.
No timber.
Undergrowth, short shadscale.
Good grass for grazing

East, on random line bet. secs. 26
and 35

40.00

Set temporary $\frac{1}{4}$ sec. cor.

80.03

Intersect N. and S. line 3 lks. S. of
the cor. of secs. 25, 26, 35 and 36
Thence I run

Subdivision of T. 24 S., R. 13 E.

Chambers

S. $89^{\circ}59'W$, on true line bet. secs. 26 and 35.

Over rolling sandy land sloping S., through short undergrowth of shadscale

40.01 1/2

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

S 26
1/4

S 35

1912

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high N. of cor.

80.03

The cor. of secs. 26, 27, 34 and 35
Land, rolling, draining S.

Soil, sandy and gravelly; 3 rd. rate
Sub-soil, hard sand and gravel.

No timber.

Undergrowth, short shadscale.

Good grass for grazing

N. $0^{\circ}01'W$, bet. secs. 26 and 27.

Over rolling sandy land through short undergrowth of shadscale

40.00

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

S 27 | S 26
1/4

1912

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high W. of cor.

Note: Cor. is situated on deep loose sand.

Subdivision of T. 24 S., R. 13 E.

chain.

80.00

Set an iron post, 3 ft. long, 2 in. in dia., 24 ins. in the ground for cor. of secs. 22, 23, 26 and 27, with brass cap marked

T 24 S	R 13 E
S 22	S 23
S 27	S 26
1912	

dig pits, 18 x 18 x 12 ins., in each sec., 5 1/2 ft. dist., raise a mound of earth 4 ft. base, 2 ft. high W. of cor.

Note. Cor. is situated on deep loose sand.

Land, rolling draining S. and W. Soil, deep loose sand; 3 rd. rate Sub-soil, sand.

No timber

Undergrowth, short shadscale.

Good grass for grazing.

N. 89° 59' E., on random line bet. secs. 23 and 26.

40.00

Set temporary 1/4 sec. cor.

79.98

Intersect N. and S. line at the cor. of secs. 23, 24, 25 and 26

Thence I run

S. 89° 59' W., on true line bet. secs. 23 and 26.

Over hilly land sloping SW. through short undergrowth of shadscale.

11.00

Leave hilly land, bears NW. and SE. Thence over rolling land.

39.99

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

S 23	↓
1/4	
S 26	
1912	

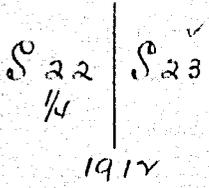
dig pits, 18 x 18 x 12 ins., E. and W. of

Subdivision of T. 24 S., R. 13 E.

chains

79.98 post, 3 ft. dist.; raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor. The cor. of secs. 22, 23, 26 and 27. Land, rolling and hilly with a general S.W. drain. Soil, sandy and gravelly; 3rd. rate. Sub-soil, hard sand and gravel. No timber. Undergrowth, short shade-scale. Good grass for grazing. Hilly land on E. 11 chs. August 7: At this sec. cor., I set off $16^{\circ} 23'$ N., on the decl. arc; and at $12^{\text{h.}} 06^{\text{m.}}$ p.m. l.m.t., observe the sun on the meridian; the resulting lat. is $38^{\circ} 43'$

35.00 N. $0^{\circ} 01'$ W., bet. secs. 22 and 23. Over rolling sandy land, through short undergrowth of shade-scale. Gradually ascend. Thence over land facing W. 40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked.



dig pits, $18 \times 18 \times 12$ ins., N. and S. of post, 3 ft. dist., raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high W. of cor. Note: A rocky knoll, 35 ft. high bears N.E., 5.00 chs. 80.00 Set an iron post, 3 ft. long, 2 in. in dia., 24 ins. in the ground for cor. of secs. 14, 15, 22 and 23, with brass cap marked

Subdivision of T. 24 S., R. 13 E.

chains

T 24 S	R 13 E
S 15	S 14
S 22	S 23

1912

dig pits, 18 x 18 x 12 ins., in each sec.,
 5 1/2 ft. dist., raise a mound of earth
 4 ft. base, 2 ft. high W. of cor.
 Land rolling with a general W. drain.
 Soil, sandy and gravelly, 3rd. rate.
 Sub-soil, hard dry sand and gravel.
 No timber.
 Undergrowth, short shadscale.
 Good grass for grazing

August 7, 1912

August 8: At 8^{h.} 05^{m.} a.m. l.m. f., I
 set off 38° 44' on the lat. arc; 16° 10' N.
 on the decl. arc; and determine a
 meridian with the solar at the cor.
 of secs. 14, 15, 22 and 23.

Thence I run

N. 89° 59' E., on random line bet. secs.
 14 and 23.

40.00 Set temporary 1/4 sec. cor.

80.06 Int. erect N. and S. line 7 lks. N. of the
 cor. of secs. 13, 14, 23 and 24.

Thence I run

N. 89° 58' W., on true line bet. secs. 14 and
 23.

Over rolling, ^{sandy} land sloping E., through
 short undergrowth of shadscale.

Gradually ascend towards rocky
 breaks.

12.30 Leave rolling land, bears N. and SE.
 Begin ascent over rocky breaks.

18.00 Top of ledge 60 ft. high and spur, 100
 ft. above sec. cor. projects NE.
 Descend 30 ft. to

20.30 Hollow, drains NE.
 Ascend 50 ft. to

Subdivision of T. 24 S., R. 13 E.

Chains

27.50 Spur, projects N.
Descend 40 ft. to

35.00 Hollow, drains N.
Ascend.

40.03 Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in the ground for $\frac{1}{4}$
sec. cor., with brass cap marked

S 14^v
1/4

S 23

1912

dig pits, 18 x 18 x 12 ins., E. and W.
of post, 3 ft. dist., raise a mound
of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N.
of cor.

45.00 Ridge, 50 ft. above $\frac{1}{4}$ sec. cor., bears
NW. and SE.

Thence descend over land facing W.

80.06 75 ft. below ridge.

The cor. of secs. 14, 15, 22 and 23.

Land, rolling mountainous and
hilly, draining NE. on E. 45 chs.
and W. on W. 35.06 chs.

Soil, sandy, gravelly and rocky; 4
th. rate.

Sub-soil, hard dry sand and gravel.

No timber.

Undergrowth, short shadscale.

Good grass for grazing.

Mountainous land on. 33.70 chs.

N. 0° 01' W., bet. secs. 14 and 15
Over hilly land draining W.,
through short undergrowth of shadscale.
Gradually ascend 40 ft. to

23.50 Spur, projects NW.

Descend 30 ft. to

29.00 Hollow, drains NW.

Ascend 50 ft. to

36.30 Ridge and top of breaks, bears NW.

Subdivision of T. 24 S., R. 13 E.

Chains

and SE.

- 40.00 Ascend 25 ft. to
 At head of hollow, drains E.
 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked

S 15	S 14
$\frac{1}{4}$	

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

- 47.00 Ascend 25 ft. to
 Spur, projects NE.
 Descend over rocky breaks.
 60.00 Wash in hollow, 30 lks. wide, 90 ft below spur, drains E.

- Ascend 75 ft. to
 69.00 Enter brush, bears NE. and SW.
 Thence over gently rolling land.
 80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 10, 11, 14 and 15 with brass cap marked

T 24 S	R 13 E
S 10	S 11
S 15	S 14

1912

dig pits, 18 x 18 x 12 ins., in each sec., $5\frac{1}{2}$ ft. dist., raise a mound of earth 4 ft. base, 2 ft. high W. of cor.

land, hilly and rolling, draining W. on S. 36.30 chs. and E. on N.

43.70 chs.

Soil, gravelly, rocky and sandy; 4th rate.

Subdivision of T. 24 S., R. 13 E.

chain

Sub-soil, rocky and gravelly.

No timber.

Undergrowth, short shadscale.

Good grass for grazing.

Hilly land on S. 69.00 chs.

August 8: At this sec. cor., I set off $76^{\circ} 06' N.$, on the decl. arc; and at $12^h 05^m$ p.m. l.m. t., observe the sun on the meridian; the resulting lat. is $38^{\circ} 44'$

S. $89^{\circ} 58' E.$, on random line bet. secs. 11 and 14.

40.00
79.96

Set temporary $\frac{1}{4}$ sec. cor.

Intersect N. and S. line $1\frac{1}{2}$ lks. S. of the cor. of secs. 11, 12, 13 and 14

Thence I run

S. $89^{\circ} 57' W.$, on true line bet. secs. 11 and 14.

Over rolling sandy land draining S., through short undergrowth of shadscale.

Gradually descend

39.98

Enter solid sandstone bed rock, bears N. and S.

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked

S 11

1/4

S 14

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.

Note. On account of natural obstacles, I am unable to set post in the ground.

119.80

Hollow, drains SE.

Enter rocky breaks; ascend

Subdivision of T. 24 S., R. 13 E.

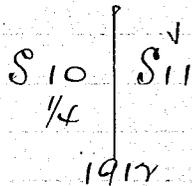
chains

70.20 Top of breaks, 75 ft. above hollow, bears NE. and SW. Leave sandstone bedrock. Thence over rolling brush.

79.96 The cor. of secs. 10, 11, 14 and 15. Land, rolling and mountainous with a general S. drain. Soil, sandy, gravelly and solid bed rock; 4 th. rate. Sub-soil, hard dry sand and gravel. No timber. Undergrowth short shadscale. Good grass for grazing. Mountainous land 20.40 chs.

N. 0° 01' W., bet. secs. 10 and 11. Over rolling sandy brush land through short undergrowth of shadscale and some greasewood. Gradually ascend.

80.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked.



dig. pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high W. of cor.

75.00 Leave brush, bears E. and W. Descend abruptly 50 ft. to

77.50 Hollow, drains NW. Ascend 30 ft. to

80.00 Spur, projects NW.

Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 2, 3, 10 and 11, with brass cap marked.

Subdivision of T. 24 S., R. 13 E.

chauss

T 24 S	R 13 E [✓]
S 3	S 2
S 10	S 11

1912.

raise a mound of stone, 2 ft. base,
1 1/4 ft. high W. of cor.

Note: On account of natural obstacles,
I am unable to set post in the ground.

Land, rolling and mountainous.

S. 75 chs. rolling land draining SW.

Soil, sandy; 3rd rate on hard sand and
gravel sub-soil; Undergrowth short
shadscale and greasewood. Good grass
for grazing. N. 5 chs. mountainous land
draining NW.; soil, rocky on rocky
sub-soil; 4th. rate. Undergrowth
short shadscale. No grass.

No timber.

Mountainous land 500 chs.

August 8, 1912

August 9: For solar observation, see
line bet. secs. 1 and 12.

N. 89° 57' E., on random line bet. secs.
2 and 11

40.00 Set temporary 1/4 sec. cor.,

79.92 Intersect N. and S. line 3 lks. N. of
the cor. of secs. 1, 2, 11 and 12.

Thence, I run

S. 89° 58' W., on true line bet. secs. 2
and 11.

Over nearly level sandy bench,
through short undergrowth of
shadscale and some greasewood.

28.00 Leave bench, bears NE. and SW.

Descend 40 ft. to

35.00 Hollow, drains NE.

Ascend

39.96 Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in the ground for 1/4

Subdivision of T. 24 S., R. 13 E.

Chaus

sec. cor., with brass cap marked

$S 2 \frac{1}{4}$

$\frac{1}{4}$

$S 11$

1912

dig pits, 16 x 18 x 12 ins., E. and W. of post, 3 ft. dist., raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor. August 9: At this $\frac{1}{4}$ sec. cor. I set off $15^{\circ} 49'$ N., on the decl. arc; and at $12^{\text{h}} 05^{\text{m}}$ p.m. l.m.t., observe the sun on the meridian; the resulting lat. is $38^{\circ} 45'$

43.30 Enter bench, bears NE. and SW.

68.30 Leave bench, bears N. and S.

Enter mountainous land.

Descend 50 ft. to

79.92 The cor. of secs. 2, 3, 10 and 11.

Land, rolling and mountainous.

E. 68.30 chs. rolling land draining N.

Soil sandy on hard sand and gravel

sub-soil; 3rd. rate. Undergrowth

short shadscale and greasewood.

Good grass for grazing. W. 11.62 chs.

mountainous land draining W.

Soil, rocky on rocky sub-soil; 4th.

rate. Undergrowth, short shadscale.

No grass.

No timber.

Mountainous land 11.62 chs.

N. 0.01' W., on true line bet. secs. 2 and 3.

Over mountainous land draining W., through short undergrowth of shadscale.

Descend 10 ft. to

3.00 Hollow, drains W.

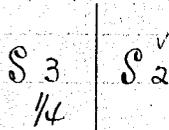
Ascend 20 ft. to

6.50 Top of ridge, bears E. and W.

Subdivision of T. 24 S., R. 13 E.

chains.

40.00 Thence descend over broken rocky land facing nearly N.
125 ft. below ridge.
Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

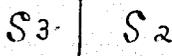
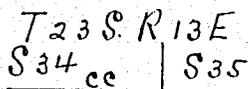


1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

89.58 Thence over rolling land
Intersect the N. bdy. of the tp. 4.24-cho. W. of the cor. of secs. 2, 3, 34 and 35 heretofore described.

Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for closing cor. of secs. 2 and 3, with brass cap marked.



T 24 S

1912

dig pits, 24 x 18 x 12 ins., crosswise on each line, E. and W. 3 ft. and S. of post, 7 ft. dist., raise a mound of earth, 4 ft. base, 2 ft. high S. of cor.
Note: I destroy all marks on old cor. pertaining to secs. 2 and 3.

Land mountainous and rolling with a general N. drain.

Soil, rocky, gravelly and gypsum; 4 th. rate.

Sub-soil, rocky and gypsum.

No timber.

Undergrowth, short shadscale.

No grass.

Mountainous land on S. 40.00 cho.

Subdivision of T. 24 S., R. 13 E.

Chemis.

August 9, 1912

August 10: At 8^h. 05^m. a.m. l.m.f., I set off 38° 41' on the lat. arc; 15° 35' N., on the decl. arc; and determine a meridian with the solar at the cor. of secs. 3, 4, 33 and 34 on the S. bdy. of the tp. heretofore described.

Hence I run

N. 0° 01' W., bet. secs. 33 and 34.

Over rolling sandy land draining S., through short undergrowth of shadeless.

Ascend 50 ft. to

16.50 low ridge, bears E., and W. 5 chs.

Gradually descend

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S 33	S 34
$\frac{1}{4}$	

1912.

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high W. of cor.

73.00 Note: A rocky knoll 35 ft. high bears W. about 7 chs.

74.00 Wash, 2 chs. wide, 1 ft. deep, drains SW.

Gradually ascend

80.00 Set an iron post, 3 ft. long, 2 in. in dia., 24 ins. in the ground for cor. of secs. 27, 28, 33 and 34, with brass cap marked

T 24 S	R 13 E
S 28	S 27
S 33	S 34

1912

Subdivision of T. 24 S., R. 13 E.

chains.

-dig pits, 18 x 18 x 12 ins., in each sec.,
 5 1/4 ft. dist., raise a mound of earth
 4 ft. base, 2 ft. high W. of cor.
 Land rolling with a general S. drain.
 Soil, sandy; 3rd. rate.
 Sub-soil, deep loose sand.
 No timber
 Undergrowth, short shadscale
 Good grass for grazing

East, on random line bet. secs. 27
 and 34.

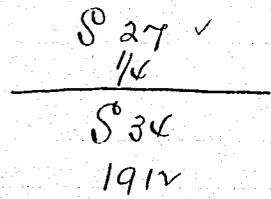
40.00 Set temporary 1/4 sec. cor.
 80.00 Intersect N. and S. line at the cor.
 of secs. 26, 27, 34 and 35

Thence I run
 West, on true line bet. secs. 27 and
 34.

Over rolling sandy land, through
 short undergrowth of shadscale.

22.00 Gradually ascend
 Low ridge, bears N. and S.
 Gradually descend over land facing
 W.

110.00 Set an iron post, 3 ft. long, 1 in. in
 dia., 24 ins. in the ground for 1/4
 sec. cor., with brass cap marked



dig pits, 18 x 18 x 12 ins., E. and W.
 of post, 3 ft. dist., raise a mound
 of earth, 3 1/2 ft. base, 1 1/2 ft. high N. of
 cor.

75.00 Wash, 1 1/2 cho. wide, 1 ft. deep, drains
 SW.

Gradually ascend
 80.00 The cor. of secs. 27, 28, 33 and 34
 Land, rolling with a general S. drain.

Subdivision of T. 24 S., R. 13 E.

Chaus.

Soil, sandy; 3rd. rate.
 Sub-soil, hard dry sand and gravel.
 No timber.
 Undergrowth, short shadscale.
 Good grass for grazing.

N. 0° 01' W., bet. sec. 27 and 28
 Over rolling sandy land draining
 S., through short undergrowth of
 shadscale

10.00 Gradually ascend
 Set an iron post, 3 ft. long, 1 in. in
 dia., 24 ins. in the ground for $\frac{1}{4}$ sec.
 cor. with brass cap marked

S 28	S 27
$\frac{1}{4}$	

1912

dig pits, 18 x 18 x 12 ins., N. and S. of
 post, 3 ft. dist., raise a mound of
 earth, 3 $\frac{1}{2}$ ft. base, 1 $\frac{1}{2}$ ft. high W. of
 cor.

50.00 Set an iron post, 3 ft. long, 2 ins. in
 dia., 24 ins. in the ground for cor.
 of sec. 21, 22, 27 and 28, with brass
 cap marked

T 24 S	R 13 E
S 21	S 22
S 28	S 27

1912

dig pits, 18 x 18 x 12 ins., in each sec.,
 5 $\frac{1}{2}$ ft. dist., raise a mound of
 earth, 4 ft. base, 2 ft. high W. of cor.
 Land, rolling with a S. drain.

Soil, sandy; 3rd. rate.
 Sub-soil, hard dry sand and gravel.
 No timber.
 Undergrowth, short shadscale.
 Good grass for grazing.
 August 10: at this sec. cor., I set off

Subdivision of T. 24 S., R. 13 E.

chauss

15° 32' N., on the decl. arc; and at 12^{h.} 05^{m.} p.m. l.m.t., observe the sun on the meridian; the resulting lat. is 38° 43'

East, on random line bet. secs. 22 and 27.

40.00 Set temporary 1/4 sec. cor.

80.05 Intersect N. and S. line, 9 lks. S. of the cor. of secs. 14, 15, 22 and 23.

Thence, 2 run

S. 89° 56' W., on true line bet. secs. 22 and 27.

Over rolling sandy land, through undergrowth of greasewood and shadscale.

40.02 1/2 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

S 22

1/4

S 27

1912

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist, raise a mound of earth 3 1/2 ft. base, 1 1/2 ft. high N. of cor.

80.05 The cor. of secs. 21, 22, 27, and 28.

Land, rolling with a general W. drain. Soil, sandy; 3rd. rate.

Sub-soil, hard dry sand and gravel.

No timber

Undergrowth, short shadscale and greasewood.

Good grass for grazing purposes.

N. 0° 01' W., bet. secs. 21 and 22.

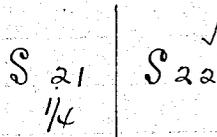
Gradually descend over rolling sandy land sloping N., through short undergrowth of shadscale

40.00 Set an iron post, 3 ft. long, 1 in. in

Subdivision of T. 24 S., R. 13 E.

chains

dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

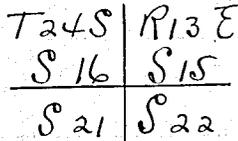


1912.

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., raise a mound of earth, $3\frac{1}{4}$ ft. base, $1\frac{1}{2}$ ft. high W. of cor.

80.00

Set an iron post, 3 ft. long, 2 in. in dia., 24 ins. in the ground for cor. of secs. 15, 16, 21 and 22, with brass cap marked



1912

dig pits, 18 x 18 x 12 ins. in each sec., $5\frac{1}{2}$ ft. dist., raise a mound of earth $\frac{1}{2}$ ft. base, 2 ft. high W. of cor. Land, rolling with a general NW. drain

Soil, sandy; 3rd. rate

Sub-soil, hard sand and gravel.

No timber.

Undergrowth, short shadscale.

Good grass for grazing

N. $89^{\circ} 56'$ E., on random line bet. secs. 15 and 22.

40.00

Set temporary $\frac{1}{4}$ sec. cor.

80.14

Int erect N. and S. line 5 lks. N. of the cor. of secs. 14, 15, 22 and 23

Thence I run

S. $89^{\circ} 58'$ W., on true line bet. secs. 15 and 22.

Gradually descend over rolling sandy land sloping W., through short undergrowth of shadscale and some greasewood

Subdivision of T. 24 S., R. 13 E.

Chaus

40.07

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S 15

$\frac{1}{4}$

S 22

1912

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.

80.14

The cor. of secs. 15, 16, 21 and 22. Land, rolling with westerly drain soil, sandy and gravelly; 3rd. rate. Sub-soil, hard gravel.

No timber.

Undergrowth, short shadscale.

Good grass for grazing purposes.

August 10, 1912

August 12: At 8^{h.} 05^{m.} a.m. l.m.t., I set off 38° 43' on the lat. arc; 14° 59' N. on the decl. arc; and determine a meridian with the solar at the cor. of secs. 15, 16, 21 and 22.

Thence I run

N. 0° 01' W. bet. secs. 15 and 16.

Over rolling sandy land draining NW., through undergrowth of short shadscale and some greasewood

40.00

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S 16

$\frac{1}{4}$

S 15

1912

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high W. of

Subdivision of T. 24 S., R. 13 E.

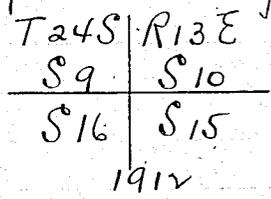
chains

60.00

Cor.
wide hollow, drains W.
Leave sandy land, enter hard
gypsum soil, bears E. and W.
gradually ascend.

80.00

Set an iron post, 3 ft. long, 2 ins. in
dia., 24 ins. in a mound of stone
and earth, 4 ft. base, 2 ft. high for
cor. of secs. 9, 10, 15 and 16, with
brass cap marked,



raise a mound of stone, 2 ft. base,
1 1/2 ft. high W. of cor.

Note: On account of natural obstacles
I am unable to set post in the ground
Land, rolling with a general west
drain

Soil, sandy, gravelly and gypsum,
3rd. rate.

Sub-soil, hard dry sand, gravel and
gypsum.

No timber.

Undergrowth, short shadscale and
some greasewood.

Good grass for grazing on S. 40.00 chs

40.00

80.21

N. 89° 58' E., on random line bet. secs
10 and 15

Set temporary 1/4 sec. cor.

Intersect N. and S. line 7 lks. S. of
the cor. of secs. 10, 11, 14 and 15.

Thence, I run

S. 89° 55' W., on true line bet. secs.
10 and 15.

gradually descend over sandy land
draining SW., through undergrowth
of short shadscale

Subdivision of T. 24 S.; R. 13 E.

chains.

30.00 wide hollow, drains SW.

Thence over land facing S.

40. 10 $\frac{1}{2}$ Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S 10 $\frac{1}{2}$

1/4

S 15

1912

- dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., raise a mound of earth, 3 $\frac{1}{2}$ ft. base, 1 $\frac{1}{2}$ ft. high N. of cor.

65.00 Leave sandy land, enter solid gypsum soil, bears N. and S.

80.21 The cor. of secs. 9, 10, 15 and 16. Land, rolling with general SW. drain.

Soil, sandy, gravelly and gypsum; 3rd. rate.

Sub-soil, sandy and gypsum.

Solid gypsum soil on W. 15. 21 chs.

No timber.

Undergrowth, short shadscale and some greasewood.

Good grass for grazing on E. 65.20 chs.

N. 0° or W., bet. secs. 9 and 10.

Over broken hilly land of gypsum formation, through short undergrowth of shadscale.

30.00 Small hollow, drains NE.

Ascend.

34.00 Edge of rocky breaks, bears NW. and SE.

Descend abruptly 75 ft. over rocky N. slope to

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for

Subdivision of T. 24 S., R. 13 E.

chains

1/4 sec. cor., with brass cap marked

S 9	S 10
1/4	

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground

August 12: At this cor., I set off 140' 56' N., on the decl. arc; and at 12^{h.} 05^{m.} p. m. l. m. t., observe the sun on the meridian; the resulting lat. is 38° 45'

Continue to descend.

56.00 Same hollow, drains NW.

Ascend 50 ft. to

62.00 Spur, projects W.

Descend 40 ft. to

71.00 Hollow, drains NW.

Gradually ascend.

80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 2 1/2 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 3, 4, 9 and 10, with brass cap marked

T 24 S	R 13 E
S 4	S 3
S 9	S 10

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

Land, mountainous with a general NW. drain.

Soil, rocky and gypsum; 4th. rate sub-soil, hard gypsum.

Subdivision of T. 24 S., R. 13 E.

Chains

No timber.
Undergrowth, short shadscale.
Mountainous land, 80.00 chs.

N. 89° 55' E. on random line bet. secs. 3 and 10

40.00

Set temporary $\frac{1}{4}$ sec. cor.

80.21

Intersect N. and S. line $\frac{1}{2}$ Sec. S. of the cor. of secs. 2, 3, 10 and 11

Thence I run

S. 89° 50' W., on true line bet. secs. 3 and 10.

Over mountainous land draining NW., through short undergrowth of shadscale descend 75 ft. to

10.00

Hollow, drains NW.

Ascend 50 ft. to

22.00

Rocky spur, projects N.

Thence descend over broken land facing nearly W.

140.10 $\frac{1}{2}$

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S^o 3 $\frac{1}{2}$

$\frac{1}{4}$

S^o 10

1917

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.

80.21

The cor. of secs. 3, 4, 9 and 10.

Land, mountainous with a general West drain.

Soil, rocky and gypsum; 11 th. rate.

Sub-soil, rocky.

No timber.

Undergrowth, short shadscale.

Mountainous land 80.21 chs.

N. 0° 01' W., bet. secs. 3 and 4.

Over mountainous land draining W.

Subdivision of T. 24 S., R. 13 E.

chains

through short undergrowth of
shadscale.

Gradually ascend.

16.70 Low spur, projects W.

Descend

18.50 Wagon road from Hanksville, Utah to
Green River, Utah, bears NE. and SW.

19.20 Hollow, 50 ft. deep, drains SW.

Ascend 60 ft. to

30.00 Low ridge, bears NE. and SW.

Gradually descend.

40.00 Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in a mound of stone
and earth, 4 ft. base, 2 ft. high for
1/4 sec. cor., with brass cap marked

S 4
1/4

S 3

1912

raise a mound of stone, 2 ft. base,
1 1/2 ft. high W. of cor.

Note: On account of natural obstacles,
I am unable to set post in the ground.

58.30 Begin abrupt descent into Iron Spring
gulch, bears NE. and SW.

62.00 Wash in gulch, 150 chs. wide, 100 ft.
below top, drains N. 20° E.

Ascend abruptly from gulch.

80.00 Spur, projects E.

Descend 50 ft. to

85.00 Hollow, drains E.

Ascend 50 ft. to

89.85 On spur, projects NE.

Intersect N. bdy. of the tp. 4.50 chs.

West of the cor. of secs. 3, 4, 33 and
34, heretofore described.

Set an iron post, 3 ft. long, 2 ins. in
dia., 24 ins. in a mound of stone
and earth, 4 ft. base, 2 ft. high for
closing cor. of secs. 3 and 4, with

Subdivision of T. 24 S., R. 13 E.

Chavis.

brass cap marked

T 23 S R 13 E ✓	
S 33	S 34
S 4	S 3
T 24 S	

1912

raise a mound of stone, 2 ft. base,
1 1/2 ft. high S. of cor.

Note: On account of natural obstacles,
I am unable to set post in the ground.
I destroy all marks on old cor.
pertaining to secs. 3 and 4.

Land mountainous draining to
Iron Spring Gulch.

Soil, rocky; 4 th. rate.

Sub-soil, rocky.

No timber.

Undergrowth, short shadscale.

Some good grass for grazing purposes.

Mountainous land 89.85 chs.

August 17, 1912

August 13: At 8^h. 05^m. a.m. l.-m. t.,
I set off 38° 41' on the lat. arc; 14° 41'
N., on the decl. arc; and determine
a meridian with the solar at the
cor. of secs. 4, 5, 32 and 33 on the S.
bdy. of the tp. heretofore described.
Thence I run.

N. 0° 02' W., bet. secs. 32 and 33_x

Over rolling sandy land, through
short undergrowth of shadscale.
Ascend 25 ft. to.

4.00 Top of north side of Cottonwood
hollow, bears SE. and W.

Thence gradually ascend through
deep sand.

40.00 Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in the ground for 1/4
sec. cor., with brass cap marked.

Subdivision of T. 24 S., R. 13 E.

Chau

S 32	S 33
1/4	

1917

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high W. of cor.

80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 28, 29, 32 and 33, with brass cap marked

T 24 S	R 13 E
--------	--------

S 29	S 28
------	------

S 32	S 33
------	------

dig pits, 18 x 18 x 12 ins. 1912

dig pits, 18 x 18 x 12 ins., in each sec., 5 1/2 ft. dist., raise a mound of earth, 4 ft. base, 2 ft. high W. of cor. Land, rolling, draining S.

Soil, sandy on sandy sub-soil; 3 rd. rate.

No timber.

Undergrowth, short shadscale
Good grass for grazing.

East, on random line bet. secs. 28 and 33.

140.00 Set temporary 1/4 sec. cor.

80.01 Intersect N. and S. line 7 lks. S. of the cor. of secs. 27, 28, 33 and 34

Thence 2 run

S. 89° 57' W., on true line bet. secs. 28 and 33.

Over rolling sandy land draining SW., through shadscale and greasewood undergrowth.

140.00 1/2 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

Subdivision of T. 24 S., R. 13 E.

chains

S 28
1/4

S 33
1912

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high N. of cor.

70.00 A rocky knoll, 50 ft. high, bears N. 5 cho.

80.01 The cor. of secs. 28, 29, 32 and 33. Land, rolling with general SW. drain. Soil, sandy; 3 rd. rate. Sub-soil, hard dry sand and gravel. No timber. Undergrowth, short shadscale and greasewood. Good grass for grazing purposes.

N. 0° 02' W., bet. secs. 28 and 29. Over rolling sandy land draining S., through undergrowth of shadscale and greasewood gradually ascend.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

S 29 | S 28
1/4
1912

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high W. of cor.

80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 20, 21, 28 and 29, with brass cap marked

Subdivision of T. 24 S., R. 13 E.

Chains.

T. 24 S	R. 13 E
S 20	S 21
S 29	S 28

1912.

dig pits, 18 x 18 x 12 ins., in each sec.,
5 1/2 ft. dist., raise a mound of earth,
4 ft. base, 2 ft. high W. of cor.
Land, rolling with a general S.
drain.

Soil, sandy on sandy sub-soil, 3
rd. rate.

No timber.

Undergrowth, shadscale and grease-
wood.

Good grass for grazing.

N. 89° 57' E., on random line bet. secs.
21 and 28.

40.00

Set temporary 1/4 sec. cor.

79.98

Intersect N. and S. line, 9 lks. N. of
the cor. of secs. 21, 22, 27 and 28.

Thence I run

N. 89° 59' W., on true line bet. secs. 21
and 28.

Over rolling sandy land draining
NW., through short undergrowth of
shadscale and some greasewood.

39.99

Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in the ground for 1/4
sec. cor., with brass cap marked

S 21 ✓
1/4

S 28

1912

dig pits, 18 x 18 x 12 ins., E. and W.
of post, 3 ft. dist., raise a mound
of earth, 3 1/2 ft. base, 1 1/2 ft. high N. of
cor.:

79.98

The cor. of secs. 20, 21, 28 and 29.
Land, rolling with general NW. drain.

Subdivision of T. 24 S., R. 13 E.

chains.

Soil, sandy on sandy sub-soil, 3rd rate.

No timber.

Undergrowth short shadscale and some greasewood.

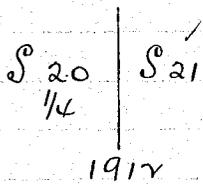
Good grass for grazing purposes.

August 13: At this sec. cor., I set off $14^{\circ} 38' N.$, on the decl. arc; and at 12^h. 05^m. p.m. l.m.t., observe the sun on the meridian; the resulting lat. is $38^{\circ} 43'$

N. $0^{\circ} 02' W.$, bet. secs. 20 and 21.

Over rolling sandy land, through undergrowth of short shadscale and greasewood.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 in. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked



dig pits, $18 \times 18 \times 12$ in., N. and S. of post, 3 ft. dist., raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high W. of cor.

55.00 Wagon road from Hawksville, Utah, to Greenriver, Utah, bears NE. and SW.

67.00 Top of perpendicular sandstone ledge and south side of Iron Spring Gulch, bears NE. and SW.

69.00 Descend abruptly 90 ft. to wash in gulch, 1.50 chs. wide, drains NE.

77.00 Ascend abruptly 80 ft. to top of north side of gulch, bears N.E. and S. $30^{\circ} W.$
Gradually ascend 20 ft to

Subdivision of T. 24 S., R. 13 E.

chains

80.00

Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 16, 17, 20 and 21, with brass cap marked

T. 24 S. | R. 13 E.

S. 17 | S. 16

S. 20 | S. 21

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground. Land, rolling and mount ainous with a general N. drain.

S. 67 chs. rolling land, soil, sandy and gravelly on gravelly sub-soil; 3rd. rate. Undergrowth, shadscale and greasewood. Good grass for grazing. N. 13 chs. mount ainous land: soil, rocky on rocky sub-soil; 4th. rate. some shadscale undergrowth. No timber.

Mount ainous land 13.00 chs.

August 13, 1912

August 14: at 8^{h.} 04^{m.} a.m. l.m. t, I set off 38° 43' on the lat. arc; 14° 23' N., on the decl. arc; and determine a meridian with the solar at the cor. of secs. 16, 17, 20 and 21. Thence I run.

S. 89° 59' E. on random line bet. secs. 16 and 21.

40.00

Set temporary 1/4 sec. cor.

80.00

Intersect N. and S. line 5 lks. N. of the cor. of secs. 15, 16, 21 and 22.

Thence, I run

N. 89° 57' W., on true line bet. secs. 16 and 21.

Subdivision of T. 24 S., R. 13 E.

chains	
	Over rolling sandy land draining NW., through undergrowth of shadscale and greasewood
40.00	Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked $\begin{array}{r} S 16 \checkmark \\ \hline \frac{1}{4} \\ \hline S 21 \\ 1912 \end{array}$
	dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist, raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.
60.50	Wagon road from Hanksville, Utah to Greenwin, Utah, bears N. 30° E., and S, 30° W.
65.00	East side of Iron spring Gulch, bears N. 30° E., and S. 30° W. Descend 100 ft. to
75.00	Wash in bottom of gulch, 150 chs. wide, drains N. 30° E. Ascend abruptly 75 ft. over ledges to
76.50	Top of west side of gulch, bears NE. and SW. Gradually ascend.
80.00	The cor. of secs. 16, 17, 20 and 21 Land, rolling and mountainous, draining N. East 65 chs, rolling land. soil, sandy and gravelly on hard gravel and sand sub-soil. Undergrowth, shadscale and greasewood. Good grass for grazing. W. 15 chs. mountainous land. soil, rocky on rocky sub-soil; 4 th. rate. Undergrowth, short shadscale. No timber. Mountainous land 15. chs.

N. $0^{\circ} 02'$ W., bet. secs. 16 and 17.

Subdivision of T. 24 S., R. 13 E.

Chains

Over rolling mountainous land draining E., through short undergrowth of shade scale.

29.00 Hollow, 60 ft. deep, drains E.

Ascend 50 ft. to

40.00 Spur, projects E.

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for 1/4 sec. cor., with brass cap marked

S 17	S 16
1/4	

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of, natural obstacles, I am unable to set post in the ground.

Descend

54.00 Hollow, 50 ft. deep, drains E.

Ascend 30 ft. to

61.50 Top of east point of spur.

Descend 20 ft. to

70.00 Hollow, drains SE.

Gradually ascend.

80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 8, 9, 16 and 17, with brass cap marked

T 24 S	R 13 E
S 8	S 9

S 17	S 16
------	------

1912

dig pits, 18 x 18 x 12 ins. in each sec., 5 1/2 ft. dia., raise a mound of earth 4 ft. base, 2 ft. high W. of cor.

Land, mountainous, draining E. Soil, gravelly and sandy; 3rd. rate. Sub-soil, gravelly and rocky.

Subdivision of T. 24 S., R. 13 E.

Chains

Undergrowth short shadscale.
 Good grass for grazing.
 Mountainous land, 80.00 chs.
 August 14: At this sec. cor., I set off
 $14^{\circ} 19' N.$, on the decl. arc, and at $12^{\text{h}} 04^{\text{m}}$
 p.m. l.m.t., observe the sun on the
 meridian, the resulting lat. is $38^{\circ} 44'$

S. $89^{\circ} 57' E.$, on random line bet. secs.
 9 and 16.

40.00 Set temporary $\frac{1}{4}$ sec. cor.

79.99 Intersect N. and S. line 2 lks. N. of
 the cor. of secs. 9, 10, 15 and 16

Thence I run

N. $89^{\circ} 56' W.$, on true line bet. secs. 9
 and 16.

Gradually descend over rolling land
 sloping W., through short under-
 growth of shadscale.

27.70 Wagon road from Hanksville, Utah
 to Greenriver, Utah, bears N. and
 S.

39.99 $\frac{1}{4}$ Set an iron post, 3 ft. long, 1 in. in
 dia., 24 ins. in the ground for $\frac{1}{4}$
 sec. cor., with brass cap marked

S 9 $\frac{1}{4}$

$\frac{1}{4}$

S 16

1912.

dig pits, 18 x 18 x 12 ins., E. and W.
 of post, 3 ft. dist., raise a mound
 of earth, $3\frac{1}{4}$ ft. base, $1\frac{1}{2}$ ft. high N.
 of cor.

53.00 Top of east side of Iron Spring Gulch,
 bears N. and S.

57.00 Descend abruptly 100 ft. to
 wash in gulch, 150 chs. wide,
 drains N.

61.00 Ascend abruptly 100 ft. to
 Top of west side of gulch, bears N.

Subdivision of T. 24 S., R. 13 E.

chains

and S.

Thence gradually ascend over land facing E.

79.99

The cor. of secs. 8, 9, 16 and 17.

Land, rolling and mountainous E. 53 chs. rolling land, draining W., next 8 chs. mountainous land draining N. and W. 18.99 chs. rolling land draining E.

Soil, gravelly, sandy and rocky; 4th. rate.

Sub-soil, hard dry sand, gravelly and gypsum.

No timber.

Undergrowth, short shadscale.

Some grass for grazing.

Mountainous land 8 chs.

N. 0° 02' W., bet. secs. 8 and 9.

Gradually ascend over hilly land, through short undergrowth of shadscale.

40.00

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S 8	S 9
$\frac{1}{4}$	
1912	

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist, raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high W. of cor.

Note: Cor. is situated on ridge, bearing NE. and SW.

Gradually descend.

44.00

Begin abrupt descent into canyon.

116.50

Wash in canyon, 50 lks. wide, 50 ft. below top, drains E.

Ascend

Subdivision of T. 24 S., R. 13 E.

chains.

- 48.00 Low spur, projects E.
Descend.
- 51.00 Same canyon wash, 50 lks. wide, in
gorge 100 ft. deep, drains NW.
- 52.00 Point of spur, projects W.
Descend abruptly 125 ft. over ledges to
- 56.00 Same wash in canyon, 50 lks. wide,
drains NE.
Ascend abruptly over ledge 100 ft. high
- 65.00 Top of north side of canyon, 125 ft.
above wash, bears E. and W.
Descend 50 ft. to
- 67.50 Rocky hollow, drains SE.
Ascend 75 ft. to
- 80.00 Ridge, bears NE. and SW.
Set an iron post, 3 ft. long, 2 ins. in
dia., 24 ins. in a mound of stone
and earth, 4 ft. base, 2 ft. high for
cor. of secs. 4, 5, 8 and 9, with
brass cap marked ✓

T 24 S	R 13 E
S 5	S 4
S 8	S 9

1912.

raise a mound of stone, 2 ft. base,
17/2 ft. high W. of cor.

Note: On account of natural obstacles
I am unable to set post in the
ground.

Land, mountainous with a
general NE. drain.

Soil, gravelly and rocky; 4th rate
Sub-soil, hard dry sand, gravelly
and rocky.

No timber.

Undergrowth short shadscale.

Some good grass for grazing on S. 40.
Chs.

Mountainous land 8000 chs.

August 14, 1912.

Subdivision of T. 24 S., R. 13 E.

Chaus.

August 19: At 8^{h.} 34^{m.} a.m. l.m.t.,
I set off $38^{\circ}45'$ on the lat. arc, $12^{\circ}47'$
N., on the decl. arc, and determine
a meridian with the solar at the
cor. of secs. 4, 5, 8 and 9.

Thence I run
S. $89^{\circ}56'$ E., on random line bet. secs.
4 and 9.

40.00 Set temporary $\frac{1}{4}$ sec. cor.

79.97 Intersect N. and S. line 7 lks. N. of
the cor. of secs. 3, 4, 9 and 10.

Thence I run
N. $89^{\circ}53'$ W., on true line bet. secs.
4 and 9.

Over mountainous land, through
short undergrowth of shade-scale.

Descend 50 ft. to

800 Enter channel of Iron Spring wash,
bears N. and S.

8.40 Wagon road from Hanksville, Utah
to Greenriver, Utah, bears N. and
S.

15.00 Leave channel of wash, bears N.
and S.

Begin ascent over land facing NE.

37.00 Top of rocky bench, 150 ft. above
wash, bears NW. and SE.

Thence over land facing N.

39.98 $\frac{1}{2}$ Set an iron post, 3 ft. long, 1 in. in
dia, 24 ins. in a mound of stone
and earth, 4 ft. base, 2 ft. high for
 $\frac{1}{4}$ sec. cor., with brass cap marked

S 4¹

$\frac{1}{4}$

S 9

1912

raise a mound of stone, 2 ft. base,
1 $\frac{1}{2}$ ft. high N. of cor.

Note: On account of natural

Subdivision of T. 24 S., R. 13 E.

Chains.

obstacles, I am unable to set post in the ground.

45.00 Top of ledge 75 ft. high, bears $N. 80^{\circ} E.$ and SW.

Leave bench, descend abruptly.

52.00 Wash in bottom of box canyon, 75 lks. wide, 100 ft. below top, drains NE.

Ascend abruptly from canyon over ledges. to

57.00 Top of canyon and spur, 125 ft. above base, bears S. 2 chs.

Descend 50 ft. to

61.50 Hollow, drains SE.

Ascend 75 ft. to

79.97 The cor. of secs. 4, 5, 8 and 9.

Land, mountainous with a general NE. drain.

Soil, rocky on rocky sub-soil, 4th. rate.

No timber

Undergrowth, short shadscale.

Mountainous land 79.97 chs.

August 19: At this sec. cor., I set off $12^{\circ} 44' N.$, on the decl. arc; and at $12^h. 04^m. p.m. l.m.t.$, observe the sun on the meridian; the resulting lat. is $38^{\circ} 45'$

$N. 0^{\circ} 02' W.$, on true line bet. secs. 4 and 5.

Over broken mountainous land, through scattering cedar timber and undergrowth of shadscale.

Descend

5.50 Hollow, 30 ft. deep, drains NE.

Ascend 40 ft. to

14.30 Spur, projects E.

Descend 50 ft. to

18.00 Hollow, drains E,

Subdivision of T. 24 S., R. 13 E.

chains										
23.60	<p>Ascend 50 ft. to Ridge, bears NE. and SW. Enter rocky breaks of the San Rafael Reef bears NE. and SW. Leave scattering cedar timber and shadscale undergrowth, bears NE. and SW.</p>									
28.00	<p>Descend over solid sandstone bed-rock. Hollow, 50 ft. deep, drains NE.</p>									
30.00	<p>Ascend 30 ft. to Low sandstone spur, projects NE.</p>									
34.00	<p>Descend 30 ft. to Hollow, drains NE.</p>									
	<p>Ascend abruptly.</p>									
40.00	<p>Point for $\frac{1}{4}$ sec. cor. falls on steep slope of solid sandstone bed rock, where cor. cannot be set</p>									
40.55	<p>Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for witness cor. to the $\frac{1}{4}$ sec. cor., with brass cap marked</p> <div style="text-align: center;"> <table border="0"> <tr> <td>T. 24 S.</td> <td> </td> <td>R. 13 E.</td> </tr> <tr> <td>S 5</td> <td> </td> <td>S 4</td> </tr> <tr> <td colspan="3" style="text-align: center;">NW $\frac{1}{4}$</td> </tr> </table> <p>1917</p> </div> <p>raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.</p> <p>Note: On account of natural obstacles, I am unable to set post in the ground. Continue to ascend.</p>	T. 24 S.		R. 13 E.	S 5		S 4	NW $\frac{1}{4}$		
T. 24 S.		R. 13 E.								
S 5		S 4								
NW $\frac{1}{4}$										
43.46	<p>Top of rocky ridge, 75 ft. above hollow, bears E. and W. I am unable to continue my line north, ^{by chaining} on account of many inaccessible sandstone pinnacles and a deep box canyon with vertical walls of sandstone about 300 ft. high. I there- fore triangulate to the boundary of the</p>									

Subdivision of T. 24 S., R. 13 E.

Chambers

N. bdy. of the tp. as follows: Being unable to set a flag on line N., I which would be visible from this point or the west end of the base I set a flag N. 3° 15' E., on top of a sandstone spur, near the witness cor. to secs. 4, 5, 32 and 33. I now measure a base line west, 15.50 chs. (this is the longest base line I am able to obtain and be able to see my flag) to a point from which flag bears N. 21° 22' E., from the flag, the west end of the base bears S. 21° 22' W., by separate measurement of each angle they are found to be 93° 15', 68° 38' and 18° 07'. I therefore compute the distance as follows:

$$\begin{aligned} \log. 15.50 \text{ chs.} &= 1.190332 \checkmark \\ \log \sin 68^\circ 38' &= 9.969075 - 10 \checkmark \\ \text{Colog} \sin 18^\circ 07' &= \underline{0.507305 \checkmark} \\ \log & 1.666712 = \checkmark \end{aligned}$$

46.42 chs. to my point on ridge or a northing of 46.34 chs.

$$46.34 \text{ chs.} + 43.46 \text{ chs.} =$$

89.80 To point of triangulation.

I then continue

N. 0° 02' W.

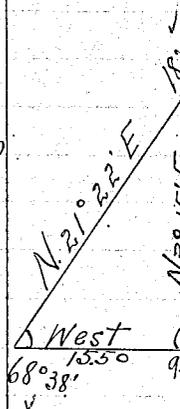
89.95 intersect N. bdy. of the tp. 1.72 chs. W.

of the true cor. point of secs. 4, 5, 32 and 33. I now measure west 2.63

chs. to a point which is N. 0° 02' W.

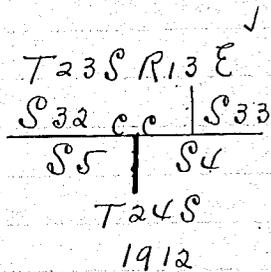
of the cor. of secs. 4, 5, 8 and 9, and which is the point for closing cor. of secs. 4 and 5, I therefore

Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for closing cor. of secs. 4 and 5, with brass cap marked



Subdivision of T. 24 S., R. 13 E.

chauss



raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high S. of cor.

Note: On account of natural obstacles I am unable to set post in the ground. I destroy all marks on old cor. pertaining to secs. 4 and 5.

Land rough mountainous draining E.

Soil, rocky on rocky sub-soil; 4 th. rate

Timber scrub cedar on S. 23.60 chs. Undergrowth, short shadscale on S. 23.60.

Land mountainous or heavily timbered and exceptionally difficult to survey 89.95 chs.

August 19, 1912

August 17: At 8^{h.} 04^{m.} a.m. l-m. t., I set off $38^{\circ} 41'$ on the lat. arc; $13^{\circ} 26'$ N. on the decl. arc; and determine a meridian with the solar at the cor. of secs. 5, 6, 31 and 32 on the S. bdy. of the tp. heretofore described. Thence I run

N. $0^{\circ} 03'$ W., bet. secs. 31 and 32.

Over rolling sandy land draining NE., through undergrowth of short shadscale and greasewood.

Gradually descend

30.00 South side of Cottonwood Hollow, bears N. 60° W. and SE.

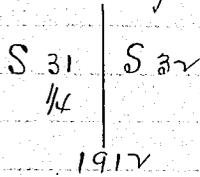
Descend 50 ft. to
37.00 Cottonwood wash in hollow, 150 chs. wide, drains SE.

Subdivision of T. 24 S., R. 13 E.

chauss

Ascend. ✓

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

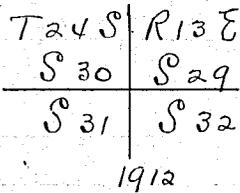


raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high W. of cor.

44.00 Top of N. side of Cottonwood Hollow, bears N. 60° W., and S. 60° E..

Thence over nearly level land,

80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 29, 30, 31 and 32 with brass cap marked



dig pits, 18 x 18 x 12 ins., in each sec., 5 $\frac{1}{2}$ ft. dist., raise a mound of earth, 4 ft. base, 2 ft. high W. of cor. Land, rolling, draining NE. to Cottonwood Wash on S 37 chs., and S. to same wash on N. 43 chs.

Soil, sandy and gravelly; 3rd rate.

Sub-soil, hard dry sand.

No timber.

Undergrowth, short shadscale and some greasewood.

Good grass for grazing.

East, on random line bet. secs. 29 and 32.

40.00 Set temporary $\frac{1}{4}$ sec. cor. ✓

80.00 Intersect N. and S. line, 5 lks. N. of the cor. of secs. 28, 29, 32 and 33
Thence I run

Subdivision of T. 24 S., R. 13 E.

chain

N. 89° 58' W., on true line bet. secs. 29 and 32.

Over rolling sandy land draining S., through undergrowth of short shadscale and some greasewood.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

S 29
1/4

S 32

1917

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high N. of cor.

80.00 The cor. of secs. 29, 30, 31 and 32. Land, rolling, draining S.

Soil, sandy on sandy sub-soil; 3 rd. rate.

No timber.

Undergrowth, short shadscale and some greasewood.

Good grass for grazing

West, on random line bet. secs. 30 and 31.

40.00 Set temporary 1/4 sec. cor.

79.37 Intersect W. bdy. of the tp. at the cor. of secs. 25, 30, 31 and 36 heretofore described.

Thence I run

East, on true line bet. secs. 30 and 31

Over rolling land draining SE., through short undergrowth of shadscale and some greasewood.

39.37 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

Subdivision of T. 24 S., R. 13 E.

Chains

S 30^v
1/4

S 31

1912

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist, raise a mound of earth 3 1/4 ft. base, 1 1/4 ft. high N. of cor.

79.37

The cor. of secs. 29, 30, 31 and 32.
Land rolling with a general S. drain.
Soil, sandy and gravelly; 3rd. rate
Sub-soil, hard dry sand.
No timber.

Undergrowth, short shadscale and some greasewood.

Good grass for grazing purposes.

N. 0° 03' W., bet. secs. 29 and 30.

Over rolling land draining S., through short undergrowth of shadscale and some greasewood

40.00

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

S 30 | S 29
1/4

1912

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist, raise a mound of earth, 3 1/4 ft. base, 1 1/4 ft. high W. of cor.

August 17: At this 1/4 sec. cor., I set off 13° 23' N., on the decl. arc; and at 12^h. 04^m. p.m. l.m.t., observe the sun on the meridian; the resulting lat. is 38° 42'

65.00

Enter large hollow, bears N. 60° E. and S. 60° W.

Descend.

74.00

Wagon road from Hanksville, Utah

Subdivision of T. 24 S., R. 13 E.

Chain

to Green river, Utah, bears N. 60° E.
and S. 60° W.

75.00 Enter channel of Iron Spring wash,
bears N. 60° E.

79.30 Leave channel of wash, and hollow,
bears N. 60° E. and S. 60° W.

Ascend 30 ft. to

80.00 Set an iron post, 3 ft. long, 2 ins. in
dia., 24 ins. in the mound of stone
and earth, 4 ft. base, 2 ft. high for
cor. of secs. 19, 20, 29 and 30 with
brass cap marked

T 24 S	R 13 E
S 19	S 20
S 30	S 29

1912

raise a mound of stone, 2 ft. base, 1 1/2
ft. high W. of cor.

Note: On account of natural obstacles,
I am unable to set post in the ground.

Land rolling and hilly, draining
S. on S. 65 chs. and NE. on N. 15 chs.

Soil, sandy and gravelly; 3rd. rate.

Sub-soil, sandy.

Some rocky soil on N. 5 chs.

No timber.

Undergrowth short shadescale and
greasewood.

Good grass for grazing purposes.

S. 89° 58' E., on random line bet. secs.
20 and 29.

110.00 Set temporary 1/4 sec. cor. |

80.01 Int. erect N. and S. line 2 lks. S. of
the cor. of secs. 20, 21, 28 and 29.

Thence I run

N. 89° 59' W., on true line bet. secs.
20 and 29.

Over rolling sandy land sloping
gently W., through undergrowth of

Subdivision of T. 24 S., R. 13 E.

Chains.

- 40.00 $\frac{1}{2}$ short shadscale and some greasewood
 Set an iron post, 3 ft. long, 1 in. in
 dia., 24 ins. in the ground for $\frac{1}{4}$ sec
 cor., with brass cap marked

$$\begin{array}{r} S\ 20\ 1 \\ \frac{1}{4} \\ \hline S\ 29 \\ 1912 \end{array}$$
- dig pits, 18 x 18 x 12 ins., E. and W. of
 post, 3 ft. dist., raise a mound of
 earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of
 cor.
- 47.00 Enter large hollow, bears NE. and SW
 descend.
- 63.00 Wagon road from Hawkville, Utah
 to Green river, Utah, bears N. 60° E.
 and S. 60° W.
- 69.50 Enter Iron Spring wash, drains N. 60° E.
- 73.00 Leave wash, bears N. 60° E. and S. 60° W.
 Ascend.
- 80.01 The cor. of secs. 19, 20, 29 and 30.
 Land rolling and hilly draining NE.
 E. 47 chs. rolling land. W. 33.01 chs.
 hilly land.
 Soil, sandy on sandy sub-soil; 3rd.
 rate. Some rocky soil on W. 7.00 chs.
 No timber.
 Undergrowth, short shadscale and
 some greasewood.
 Good grass for grazing
 August 17, 1912

August 20: at 8^{h.} 03^{m.} a.m. l.m. t.,
 I set off $38^{\circ} 43'$ on the lat. arc; $12^{\circ} 28'$
 N., on the decl. arc; and determine
 a meridian with the solar at the
 cor. of secs. 19, 20, 29 and 30.
 Thence I run
 West, on random line bet. secs. 19
 and 30.

Subdivision of T. 24 S., R. 13 E.

chain

- 40.00 Set temporary $\frac{1}{4}$ sec. cor.
- 79.25 Intersect W. bdy. of the tp. 2 lks. S. of the cor. of secs. 19, 24, 25 and 30 heretofore described.
Thence I run S. 89° 59' E., on true line bet. secs. 19 and 30.
Over rolling hilly land sloping E., through short undergrowth of shadscale and some greasewood.
- 16.75 Wash, 30 lks. wide, 2 ft. deep, drains NE.
- 39.25 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

$$\begin{array}{c} \text{S } 19 \text{ } \downarrow \\ \hline \text{NE} \\ \hline \text{S } 30 \\ \hline 1917 \end{array}$$
- raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.
- 43.50 Wash in hollow, 30 lks. wide, 50 ft. deep, drains SE.
Thence along top of N. side of Iron Spring Gulch.
- 79.25 The cor. of secs. 19, 20, 29, and 30. Land, rolling hills, draining SE. Soil, sandy and gravelly; 3rd. rate. Sub-soil, shale rocks and hard sand. No timber.
Undergrowth, short shadscale and some greasewood.
Some good grass for grazing.
-
- 1.00 N. 0° 03' W., bet. secs. 19 and 20
Over rolling hilly land draining E., through short undergrowth of shadscale and greasewood.
Top of north side of Iron Spring Gulch, bears E. and W.

Subdivision of T. 24 S., R. 13 E.

chains

Gradually descend.

9.20 Hollow, 30 ft. deep, drains N. 70° E.
Hence over land facing E.

15.00 Antelope Spring or seeps in wash,
good water, bears E. 15 chs.

40.00 Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in the ground for ¼ sec.
cor., with brass cap marked

S 19	S 20
1/4	

1917

dig pits, 18 x 18 x 12 ins., N. and S. of
post, 3 ft. dist., raise a mound of
earth, 3 1/2 ft. base, 1 1/2 ft. high W. of
cor.

55.00 Wash in large hollow, 100 ch. wide,
drains SE.

Ascend 40 ft. to

75.00 Sandy ridge, bears E. and W.

Descend 20 ft. to

80.00 Set an iron post, 3 ft. long, 2 ins.
in dia., 24 ins. in the ground for
cor. of secs. 17, 18, 19 and 20, with
brass cap marked

T 24 S.	R 13 E
S 18	S 17
S 19	S 20

1917

dig pits, 18, x 18 x 12 ins., in each sec.,
5 1/2 ft. dist., raise a mound of earth,
4 ft. base, 2 ft. high W. of cor.

Note: Cor. is situated on loose sand.

Land, rolling hills, draining E.

Soil, sandy and gravelly; 3rd. rate.

Sub-soil, sandy.

No timber.

Undergrowth, short shadscale and
some greasewood

Subdivision of T. 24 S., R. 13 E.

chain

Good grass for grazing purposes.

S. 89° 59' E., on random line bet. secs. 17 and 20.

40.00 Set temporary 1/4 sec. cor.

80.03 Intersect N. and S. line, 3 lks. S. of the cor. of secs. 16, 17, 20 and 21.

Thence I run

West, on true line bet. secs. 17 and 20.

Over rolling land draining E., through short undergrowth of shadscale and some greasewood.

40.01 1/4 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked.

S 17
1/4

S 20

1912

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high N. of cor.

Gradually ascend.

48.00 Top of low sandy ridge, bears N. and S.

Descend.

80.03 The cor. of secs. 17, 18, 19 and 20. Land, rolling hills.

Soil, sandy and gravelly; 3rd. rate.

Sub-soil, sandy.

Undergrowth, short shadscale and some greasewood.

No timber.

Good grass for grazing.

August 20: At this sec. cor., I set off 12° 24' N., on the decl. arc; and at 12^h:03^m p.m. l.m.t.; observe the sun on the meridian; the resulting lat. is 38° 44'.

Subdivision of T. 24 S., R. 13 E.

Chavis.

N. $89^{\circ} 59'$ W., on random line bet. secs. 18 and 19.

40.00 Set temporary $\frac{1}{4}$ sec. cor.

79.16 Intersect W. bdy. of the tp. 3 lks. S. of the cor. of secs. 13, 18, 19 and 24 heretofore described.

Thence I run

S. $89^{\circ} 58'$ E., on true line bet. secs. 18 and 19.

Over mountainous land, through short undergrowth of shadocale. Descend.

4.00 Top of south side of canyon, bears N. 70° W. and SE.

Descend abruptly 100 ft. over ledges to

10.20 Wash in canyon, 50 lks. wide, drains SE.

Ascend abruptly 75 ft. to

15.00 Top of N. side of canyon, bears NW. and SE.

Thence over land sloping nearly S.

29.00 Top of ridge, bears N. and SE.

Descend 30 ft. to

39.16 In hollow drains N.

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked

S 18

$\frac{1}{4}$

S 19

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

Ascend 35 ft. to

43.00 Spur, projects N.

Thence gradually descend over

Subdivision of T. 24 S., R. 13 E.

chains

79.16

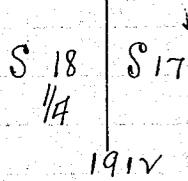
rolling land sloping NE.
 The cor. of secs. 17, 18, 19 and 20.
 Land, mount ainous and rolling.
 W. 43 chs. mount ainous land draining E.
 Soil, rocky on rocky sub-soil; 4 th. rate.
 No timber. Undergrowth; short shadscale
 E. 36.16 chs. rolling land draining NE.
 Soil, sandy and gravelly on sandy
 sub-soil; 3rd. rate. Undergrowth,
 short shadscale. Good grass for grazing.
 Mountainous land on 43.00 chs.

40.00

N. 0° 03' W., bet. secs. 17 and 18.
 Over rolling land sloping N., through
 undergrowth of shadscale and grease-
 wood.

Gradually descend.

Set an iron post, 3 ft. long, 1 in. in
 dia., 24 ins. in a mound of stone
 and earth, 4 ft. base, 2 ft. high for
 1/4 sec. cor., with brass cap marked



raise a mound of stone, 2 ft. base,
 1 1/2 ft. high W. of cor.
 Note: on account of nat ural obstacles,
 I am unable to set post in the
 ground.

53.00

Hollow, 30 ft. deep, drains NE.
 Ascend 35 ft. to

73.00

Ridge, bears NE. and SW.
 Descend 50 ft. to

80.00

Set an iron post, 3 ft. long, 2 ins. in
 dia., 24 ins. in a mound of stone
 and earth, 4 ft. base, 2 ft. high for
 cor. of secs. 7, 8, 17 and 18, with
 brass cap marked

Subdivision of T. 24 S., R. 13 E.

chains.

T 24 S	R 13 E
S 7	S 8
S 18	S 17

1917.

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

Land, rolling and hilly, draining NE.

Soil, sandy and gravelly; 3rd. rate sub-soil, rocky.

No timber.

Undergrowth, short shadscale and greasewood.

Good grass for grazing.

Hilly land on N. 27. chs.

August 20, 1917

August 21: At 8^{h.} 03^{m.} a.m. l.m. t., I set off 38° 44' on the lat. arc; 12° 08' N., on the decl. arc; and determine a meridian with the solar at the cor. of secs. 7, 8, 17 and 18.

Thence I run

East, on random line, bet. secs. 8 and 17.

40.00 Set temporary 1/4 sec. cor.

80.00 Intersect N. and S. line 7 lks. S. of the cor. of secs. 8, 9, 16 and 17.

Thence I run

S. 89° 57' W., on true line bet. secs. 8 and 17.

Over hilly land draining E., through short undergrowth of shadscale and some greasewood. Gradually ascend.

35.00 Low spur, projects SE.

Gradually descend.

40.00 Set an iron post, 3 ft. long, 1 in.

Subdivision of T. 24 S., R. 13 E.

chains.

dia., 24 in. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked

S 8 $\frac{1}{4}$
 $\frac{1}{4}$

S 17
1917

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

45.00 Hollow, drains SE.

Gradually ascend.

72.00 Top of ridge, bears NE. and SW. Descend 50 ft. to

80.00 The cor. of secs. 7, 8, 17 and 18.

Land, hilly with a general E. drain Soil, sandy and gravelly on clay and rock sub-soil; 4th. rate.

No timber

Undergrowth, short shadeless and some greasewood.

Some good grass for grazing purposes.

N. $89^{\circ} 56' W.$, on random line bet. secs. 7 and 18.

40.00 Set temporary $\frac{1}{4}$ sec. cor.

79.15 Intersect W. bdy. of the tp., 5 lks. S. of the true cor. point of secs. 7, 12, 13 and 18, heretofore described.

Thence I run

S. $89^{\circ} 56' E.$, on true line bet. secs. 7 and 18.

Over rough mountainous land in Breaks of the San Rafael Reef, through scattering scrub cedar timber.

Ascend 50 ft. to

1.00 Top of solid sandstone pinnacle.

Descend.

2.40 Hollow, drains S.

Subdivision of T. 24 S., R. 13 E.

chains.

- 7.50 Ascend 75 ft. to
Spur, projects S.
Thence over broken rocky land facing
S., along N. side of box canyon.
- 32.00 Begin descent into hollow, bears N.
and S.
- 37.00 Bottom of hollow, drains S.
Leave solid sandstone bed rock.
- 39.15 Ascend 75 ft. to
Top of ridge and east edge of the
Breaks of the San Rafael Reef, bears N.
and S.
Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in the ground for $\frac{1}{4}$
sec. cor., with brass cap marked
S 71
1/4
S 18
1912
- 74.00 raise a mound of stone, 2 ft. base,
 $1\frac{1}{2}$ ft. high N. of cor.
Leave scrub cedar timber.
Descend 100 ft. over land facing E. to
Wash in canyon, 75 lks. wide,
drains NE.
- 79.15 Ascend 50 ft. to
The cor. of secs. 7, 8, 17 and 18.
Land, mountainous, draining E.
Soil, gravelly and rocky; 4 th. rate,
Sub-soil, rocky.
Timber, scrub cedar on W. 39.15 cho.
Undergrowth, some short shadscale.
Mountainous land, 79.15 cho.
August 21: At this sec. cor., I set off
 $12^{\circ} 04'$ N., on the decl. arc; and at
 $12^{\text{h.}} 03^{\text{m.}}$ p.m. l.m.t., observe the sun
on the meridian; the resulting lat.
is $38^{\circ} 44'$

N. $0^{\circ} 03'$ W., bet. secs. 7 and 8.

Subdivision of T. 24 S., R. 13 E.

Chains

Over mountainous land draining E., through short undergrowth of shadeless
 Descend 50 ft. to
 3.00 Wash in canyon, 60 lks. wide, drains NE.

Ascend 50 ft. to
 14.40 Spur, projects E.

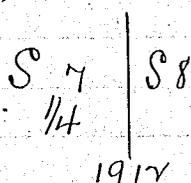
Descend 30 ft. to
 20.00 Hollow, drains E.

Ascend 35 ft. to
 28.00 Spur, projects E.

Descend 50 ft. to
 33.00 Hollow, drains E.

Ascend 30 ft. to
 36.70 Spur, projects E.

Gradually descend
 40.09 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked



raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.

Note: On account of natural obstacles I am unable to set post in the ground.
 42.00 Enter solid sandstone bed rock and Breaks of the San Rafael Reef, bears NE. and SW.

57.60 Top of ridge and deep breaks of reef bears NE. and W.

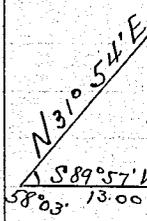
I am unable to continue my line North by chaining on account of a deep box canyon, I therefore triangulate as follows:

Set a flag on line north, then measure a base line S. $89^{\circ} 57'$ W., 1300 chs to a point from which flag bears N. 31°

Subdivision of T. 24 S., R. 13 E.

Chains

54' E., Being unable to reach my flag with my instrument I am unable to read all angles of the triangle. By the mean of 3 readings, I find that the base subtends an angle of $58^{\circ} 03'$ to the flag; therefore $\tan 58^{\circ} 03' \times$ base or $1.60 \times 13 \text{ chs} = 20.80 \text{ chs.} + 57.60 \text{ chs.}$ makes.

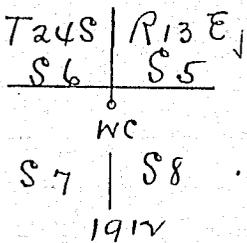


78.40

To flag on N. side of canyon. The point for cor. of secs. 5, 6, 7 and 8 will fall on steep slope of solid sandstone bed rock where cor. cannot be set, and as the point is on unsafe ground I measure S. 12 lks. to here

78.28

set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in diameter of stone and earth, 4 ft. base, 2 ft. high for witness cor. to the cor. of secs. 5, 6, 7 and 8, with brass cap marked



raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: on account of natural obstacles I am unable to set post in the ground.

60.00

The point for cor. of secs. 5, 6, 7 and 8 falls on steep slope of solid sand stone bed rock. True cor. point cannot be reached.

Land, mountainous, draining E. Soil, rocky; 4 th. rate. Sub-soil, rocks.

No timber. Undergrowth short shade scale on S. 42 chs. Some grass for grazing on S. 47 chs.

Subdivision of T. 24 S., R. 13 E.

chain.

Mountainous land 8000 chs.

August 21, 1917.

August 22: At 8^h.^{03^m} a.m. l.m.t., I set off 38° 45' on the lat. arc; 11° 48' N., on the decl. arc; and determine a meridian with the solar at the witness cor. to secs. 5, 6, 7 and 8

Thence I run

N. 89° 57' E., on random line bet. secs. 5 and 8.

I am unable to chain this line east on account of a box canyon about 500 ft. deep.

To determine distance across canyon I set a flag on E. side. Having measured the distance between the witness cor. to secs. 5, 6, 7 and 8 to a point 57.48 chs. N. 0° 03' W., of the cor. of secs.

7, 8, 17 and 18 and found it to be 20.80 chs., I use this as a base line. From the south end of the base, the flag bears N. 54° 57' E., from the flag the S. end of the base, bears S. 54° 57' W., therefore $\cotan. 35^\circ \times \text{base}$ or $1.428 \times 20.80 \text{ chs} = 29.70 \text{ chs.}$ to East side of canyon and break of the San Rafael reef.

Thence north, 1.72 chs. to true random line.

Thence N. 89° 57' E.

140.00 Set temporary $\frac{1}{4}$ sec. cor.,

79.94 Intersect N. and S. line 3 lks. S. of the cor. of secs. 4, 5, 8 and 9.

Thence I run

S. 89° 56' W., on true line bet. secs. 5 and 8.

Over mountainous land draining NE., through short undergrowth of shadeless

N 89° 57' E
29.70
N 54° 57' E 35°

Subdivision of T. 24 S., R. 13 E.

Chains.	
5.00	Descend 35 ft. to Hollow, drains NE.
17.00	Ascend 40 ft. to Spur, projects SE.
22.50	Descend 35 ft. to Hollow, drains SE.
32.50	Ascend 35 ft. to Spur, projects SE.
36.00	Descend 30 ft. to Hollow, drains SE.
	Thence along S. side of hollow, gradually ascending.
39.97	Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked $\begin{array}{r} S\ 5\ \checkmark \\ \hline N \\ \hline S\ 8 \\ 1917 \end{array}$
	raise a mound of stone, 2 ft. base, $\frac{1}{4}$ ft. high N. of cor.
50.24	Note: On account of natural obstacles, I am unable to set post in the ground. To top of east side of box canyon and edge of breaks of the Saw Rafael Reef, bears N. and S.
	Thence S. 172 chs., to joint of triangulation.
	Thence S. 89° 56' W. 79.70 chs. to
79.94	the witness cor. to secs. 5, 6, 7 and 8. Land, rough mountainous. Soil, rocky; 4 th. rate. Sub-soil, rocky. No timber. Undergrowth, short shade-scale. Mountainous land, 79.94 chs. August 22: At this cor. I set off $11^{\circ}44'$ N., on the decl. arc; and at 12 ^h . 03 ^m . p.m. l.m.t., observe the sun on the

Subdivision of T. 24 S., R. 13 E.

chain

meridian, the resulting lat. is $38^{\circ}45'$

$71^{\circ}56'$ W., on random line bet. secs. 6 and 7. from my point of triangulation 78.40 chs. N. of the cor. of secs. 7, 8, 17 and 18.

It being impossible to establish this line by chaining on account of many impassable cliffs and ledges and a box canyon, I proceed as follows.

I place my instrument on a ridge $71^{\circ}56'$ W., of the point 78.40 chs. $71^{\circ}03'$ W., of the cor. of secs. 7, 8, 17 and 18. The distance between my points of triangulation between secs. 7 and 8 is 20.80 chs. and the course is $71^{\circ}03'$ W. As my random line course is $71^{\circ}56'$ W. and the course of my base line which is the distance between 57.60 chs. and 78.40 chs. on the line between secs. 7 and 8 is $71^{\circ}03'$ W., I set a flag 4.1 lks. W. of the 57.60^{ch} point which makes my base line bear $71^{\circ}04'$ E. or at right angles to my random line. From my point on ridge, the flag set at the S. end of the base bears $S.65^{\circ}53'$ E., and by 3 separate readings find that the base subtends an angle of $24^{\circ}03'$, therefore $\cotan. 24^{\circ}03' \times \text{base}$ or 2.241×20.80 chs makes 46.61 to point of triangulation. I now measure 71.160 chs. to true random line bet. secs. 6 and 7, thence $S.89^{\circ}56'$ E. 6.61 chs. to.

116.61

40.00

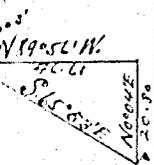
79.09

Set temporary $1/4$ sec. cor.

Intersect W. bdy. of the tp. 5 lks. N. of the cor. of secs. 1, 6, 7 and 12 heretofore described.

Thence I run

$S.89^{\circ}58'$ E., on true line bet. secs. 6 and



Subdivision of T. 24 S., R. 13 E.

Chains

7.

Over rough mountainous land facing E.

Descend over huge boulders and solid sandstone bed rock.

15.50

Canyon, 100 ft. below sec. cor., drains, NE.

Ascend abruptly over high ledges 200 ft. to

27.90

Top of solid sandstone ridge, bears N. and S.

Descend abruptly over ledges, 175 ft. to

38.00

Hollow, drains N.

Ascend.

39.09

At base of sandstone ledge 75 ft. high set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked

S 6 ✓

1/4

S 7

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.

Note: On account of natural obstacles

I am unable to set post in the ground.

Note: At 41. chs is a sandstone spur, projecting NE. about 3 chs.

I return to my point at 37.48 chs.

S. $89^{\circ} 58'$ E. of the cor. of secs. 1, 6, 7 and 12.

Thence I run S. 1.60 chs.,

Thence S. $89^{\circ} 58'$ E., 46.61 chs. by

triangulation

Thence S. 12 lks. to the witness cor. to secs. 5, 6, 7 and 8.

Land, rough mountainous in Breaks of the Saw Rafael

Subdivision of T. 24 S., R. 13 E.

chauss.

Soil, rocky; 4 th. rate.
No timber.
No Undergrowth.
Mountainous land 79.09 chs.
August 22, 1912

August 24: I make an attempt
to survey the line bet. secs. 5 and 6,
but find it impossible on account
of impassible cliffs and box canyons.
August 24, 1912

General Description.

This township contains nearly every
variety of land ranging from plains
to rough mountains, and the soil
varies from loose shifting sand to
rocky. The soil of the south eastern
part of the township and all the land
except that of the San Rafael Reef is
generally a loose sand and gravel,
and has for a sub-soil, a hard dry
sand mixed with gravel. This soil
might all be classed as 3rd. rate. The
soil of the San Rafael Reef in the
north west part of this tp. is all
rocky and may be classed as 4th. rate.
This reef consists only of a broken
mass of solid sandstone cliffs.
A few scrub cedar trees are found in
the western part of the township.
A general growth of short shadscale
and some greasewood is found over
the entire township and also an
abundant growth of wild grass which
affords excellent feed for sheep and
cattle during the winter months.
A prospect for uranium ore has been
made in secs. 24 and 25. but I am

General Description?

unable to find any trace of it.
The township is not very well watered
Crows Nest Spring, a small spring of
alkali water is found in sec. 24.
Antelope Spring or Antelope seeps in
sec. 20 is the only good water in
the tp. Many water tanks are found
on the Saw Raft Reef, but in
most cases cannot be reached on
account of high ledges.
There are no settlers in the township.
I find no indications of mineral
in the tp

Howard W. Miller.
H. D. Sawyer.

Blank

Page

FINAL OATH OF UNITED STATES SURVEYOR.

I, _____, U. S. Surveyor, do solemnly swear that, in pursuance of special instructions received from the U. S. Surveyor General for _____ bearing date of the _____ day of _____, 191 _____, I have well, faithfully, and truly, in my own proper person, and in strict conformity with said instructions, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of _____

For final oath of U.S. Surveyor see book "D" T. 23 S., R. 13 E.

_____ of the _____ Meridian, in the State of _____, which are represented in the foregoing field notes as having been executed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the U. S. Surveyor General for _____ and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

U. S. Surveyor.

Subscribed by said _____, and sworn to before me }
this _____ day of _____, 191 _____



APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, March 8, 191 5.

The foregoing field notes of the survey of _____ the subdivisional lines of Township No. 24 South, Range No. 13 East of the Salt Lake Base and Meridian, _____ Utah,

executed by _____ Howard W. Miller under his special instructions dated _____ June 10, _____, 191 23 having been critically examined, and the necessary corrections and explanations made the said field notes, and the surveys they describe, are hereby approved.

[Handwritten Signature]
U. S. Surveyor General.

I certify that the foregoing transcript of the field notes of the above-described surveys in _____, has been correctly copied from the original notes on file in this office.

Blank

Page

Blank

Page

Ed
J. J. G.

D.
BOOK A-399

FIELD NOTES

OF THE SURVEY OF THE

SUBDIVISION

O. F.

TOWNSHIP 23 SOUTH, RANGE 13 EAST

Of the SALT LAKE BASE AND Meridian,

In the State of U T A H

EXECUTED BY

HOWARD W. MILLER AND ROBERT E. CLARK

In the capacity of U. S. Surveyor and Transitman, under instructions dated June 10, 1912, issued by the United States Surveyor General to govern surveys included in Group No. 18, which were approved by the Commissioner of the General Land Office, by telegram dated June 19, 1912, pursuant to authority contained in the Act of Congress dated 1912.

Survey commenced August 25, 1912.

Survey completed October 15, 1912.

Sub. - 53-15-25
Blk. - 44-49-62

BOOK A-399

FIELD NOTES

OF THE SURVEY OF THE

INDEX DIAGRAM.

Township _____, Range _____

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Subdivision of T. 23 S., R. 13 E.

Chambers

Survey commenced August 27, 1912 and executed with a W. and L. E. Gurley solar compass No 1043. For description and test of instrument see book "A" of this survey. I examine the adjustments of the compass and correct the level and collimation errors; then, to test the solar apparatus by comparing its indications resulting from solar observations made during p.m. and a.m. hours with a true meridian established by observations on Polaris, I proceed as follows:

At my camp, which is situated near the $\frac{1}{4}$ sec. cor., bet. secs. 27 and 28, in approximate lat. $38^{\circ} 47' N.$, longitude $110^{\circ} 30' 32'' W.$; I set off $38^{\circ} 47' N.$, on the lat. arc; $9^{\circ} 58' N.$, on the decl. arc; and at $4^{\text{th}} 31^{\text{m}}$ p.m. l.m. l., determine with the solar a meridian and mark a point thereof, on a stone firmly set in the ground, 5 chs. N. of my station.

At $9^{\text{th}} 9^{\text{m}}$ p.m. by my watch which carries correct l.m. t., I observe Polaris at eastern elongation in accordance with the Manual of Instructions, and mark a point in the line thus determined, on a peg driven in the ground 5 chs. N. of my station.

August 27, 1912

August 28: At 7^{th} a.m. l.m. l., I lay off the azimuth of Polaris $1^{\circ} 30'$ to the West, and find

Subdivision of T. 23 S., R. 13 E.

chain

that my Polaris meridian agrees with the solar meridian determined, August 27.
 At 7^{h.} 31^{m.} a.m. l.m.t., I set off 38° 47' on the lat. arc; 9° 45' N., on the decl. arc; and determine a meridian with the solar; this meridian also agrees with the Polaris meridian and the solar meridian of August 27., I therefore conclude that the adjustments of the instrument are satisfactory.
 The magnetic bearing of the true meridian at 8^{h.} a.m. is N. 15° 45' W., the angle thus determined gives the magnetic decl. 15° 45' E.

I commence at the cor. of secs. 35 and 36 on the S. bdy. of the tp. heretofore described.

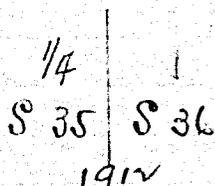
Thence I run

N. 0° 01' W., bet. secs. 35 and 36;

Over rolling hilly land draining NE., through loose sand and undergrowth of shadscale.

24.00 Gradually descend 30 ft. to wash, 30 lks. wide, 5 ft. deep, drains NE.

Ascend S. face of ridge
 40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass caps marked

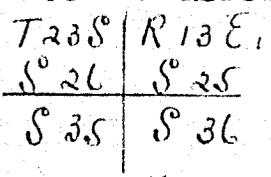


raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Subdivision of T. 23 S., R. 13 E.

chains

- 43.70 Top of ridge, 75 ft. high, bears E. and W.
 Gradually descend.
- 63.00 Top of bluff, 60 ft. high, bears E. and W.
 Descend abruptly
- 63.70 Enter channel of Irons Springs wash.
- 78.00 Leave wash, bears E. and W.
 Ascend abruptly 50 ft. over S. face of pinnacle to
- 80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 25, 26, 35 and 36, with brass cap marked



1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

Land hilly with a general NE. drain.

Soil, loose sandy, gravelly and some rocky; 4 th. rate.

Sub-soil, hard dry sand and gravel and rocky.

No timber.

Undergrowth, short shadscale.

Some good grass for grazing.

Hilly land on 80.00 cho.

East, on random line bet. secs. 25 and 36.

110.00 Set temp. 1/4 sec. cor.

80.00 Intersect E. bdy. of the tp. 2 lks

Subdivision of T. 23 S., R. 13 E.

Chaus

S. of the true cor, point of sees. 25, 30, 31 and 36, heretofore described. Thence I run S. 89° 59' W., on true line bet. sees. 25 and 36.

Over level land in bottom of Iron spring wash.

10.00 Leave wash, bears N. 70° E. and S. 70° W.

Ascend 50 ft. to

29.00 Spur, projects S.

Descend 30 ft. to

35.00 Hollow, drains S.

Ascend 35 ft. to

40.01 On spur, projects S.

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S 25^v
1/4

S 36

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high N. of cor. Descend.

48.00 Enter channel of Iron spring wash, bears N. 80° W., and S. 80° E.

76.00 Leave channel of wash, bears N. 80° E. and S. 80° W.

Ascend abruptly over rocky S. face of pinnacle.

80.01 The cor. of sees. 25, 36, 35 and 36. Land, level and hilly with a general drain to the east.

Soil, loose dry sand and gravelly, some rocky soil on W. 4 or chs.

No timber

No Undergrowth.

Subdivision of T. 23 S., R. 13 E.

chains

Some good grass for grazing.
Hilly land 12.02 chs.

N. 0° 01' W., bet. sees. 25 and 26.
Over rough mountainous land.
Ascend abruptly over S. face of
pinnacle.

2.70 Top of pinnacle, 100 ft. above cor.,
bears E. 5 chs. and W.

7.50 Descend abruptly 80 ft. to
Base of pinnacle and hollow, drains
E.

Leave mountainous land.

Thence gradually ascend over
rolling sandy land, through
short undergrowth of shade-sage.

40.00 Set an iron post, 3 ft. long, 1 in.
in dia., 24 ins. in a mound of stone
and earth, 4 ft. base, 2 ft. high for
1/4 sec. cor., with brass cap
marked

S 26	S 25 ✓
1/4	

1912

raise a mound of stone, 2 ft. base,
1 1/2 ft. high, W. of cor.

Note: on account of natural
obstacles, I am unable to set post
in the ground.

70.00 Ridge, 75 ft. high, bears E. and
W.

Gradually descend.

80.00 Set an iron post, 3 ft. long, 2 in.
in dia., 24 ins. in the ground for
cor. of sees. 23, 24, 25 and 26,
with brass cap marked

T 23 S	R 13 E
S 23	S 24
S 26	S 25

1914

Subdivision of T. 23 S., R. 13 E.

Chaus

dig pits, $18 \times 18 \times 12$ ins. in each sec., 5 ft. dist., raise a mound of earth, 4 ft. base, 2 ft. high W. of cor.

Land, rolling and mountainous.

S. 750 chs. mountainous land.

N. 72.50 chs., rolling land.

General drain of country SE.

Soil, sandy and rocky on hard dry sand and clay sub-soil; 3 rd. rate. Bed rock close to surface. No timber.

Undergrowth short shadscale on N. 72.50 chs.

Good grass for grazing on N. 72.50 chs.

Mountainous land on S. 750 chs.

August 28: At this sec. cor., I set off $9^{\circ} 40' N.$, on the decl. arc; and at $12^h 01^m$ p.m. l.m.t., observe the sun on the meridian; the resulting lat. is $38^{\circ} 48'$

The cor. of secs. 19, 24, 25 and 30 on the E. bdy. of the tp. being plainly visible,

I run for said cor.,

$N. 89^{\circ} 58' E.$, on random line bet. secs. 24 and 25

40.00 Set temp. 1/4 sec. cor.

80.04 Intersect E. bdy. of the tp. at the cor. of secs. 19, 24, 25 and 30 heretofore described.

Thence I run

$S. 89^{\circ} 58' W.$, on true line bet. secs. 24 and 25.

Over rolling sandy land sloping S, through short undergrowth of shadscale.

Subdivision of T. 23 S., R. 13 E.

chains.

40.00

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

S 24
1/4 ✓

S 25

1911

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high N. of cor.

44.00

Begin gradual ascent over land sloping nearly E.

80.04

The cor. of secs. 23, 24, 25 and 26. Land, rolling with a general SE. drain

Soil, loose dry sand; 2nd rate.

Sub-soil, hard dry sand and gravel.

No timber.

Undergrowth, short shadscale.

Good grass for grazing.

N. 0° 01' W., bet. secs. 23 and 24.

Over rolling sandy land sloping gently north, through short undergrowth of shadscale.

Gradually descend.

140.00

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor.; with brass cap marked

S 23 | S 24 ✓
1/4

1912

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high W. of cor.

Subdivision of T. 23 S., R. 13 E.

chain

So. cc Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 13, 14, 23 and 24, with brass cap marked

T 23 S.	R 13 E
S 14	S 13
S 23	S 24
1912	

dig pits, 18 x 18 x 12 ins., in each sec., 5 1/2 ft. dist., raise a mound of earth, 4 ft. base, 2 ft. high W. of cor. land, rolling with a general easterly drain.

Soil, loose dry sand; 2nd. rate.
Sub-soil, hard dry sand and gravel.
No timber.

Undergrowth, short shadscale.

Good grass for grazing purposes.

August 28, 1912

August 29: at 8^h 01^m a.m. l.m.t., I set off 38° 49' on the lat. arc; 9° 22' N., on the decl. arc; and determine a meridian with the solar at the cor. of secs. 13, 14, 23 and 24.

Thence I run

N. 89° 58' E., on random line bet. secs. 13 and 24.

110.00 Set temp. 1/4 sec. cor.

79.50 Intersect E. bdy. of the tp. 14 lks. S. of the cor. of secs. 13, 18, 19 and 24 heretofore described.

Thence I run

S. 89° 52' W., on true line bet. secs. 13 and 24.

Over rolling hilly land draining NW, through short undergrowth of shadscale.

Gradually ascend.

Subdivision of T. 23 S., R. 13 E.

Chains.

30.00

Top of ridge, 50 ft. high, bears N. and S.

Thence gradually descend over land sloping West.

39.90

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S 13
 $\frac{1}{4}$

S 24

1912

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.

79.80

The cor. of secs. 13, 14, 23 and 24. Land hilly, with a general NW. drain on E. 30 chs. and S. drain on W. 49.80 chs.

Soil, loose dry sand, gravelly and some gypsum; 2 md. rate.

Sub-soil, hard dry sand, gravelly and gypsum.

No timber.

Undergrowth, short shadscale.

Good grass for grazing purposes.

N. $0^{\circ} 01'$ W., bet. secs. 13 and 14.

Gradually ascend over rolling sandy land, through short undergrowth of short shadscale.

30.00

Low ridge, bears E. and W.

Gradually descend.

40.00

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S 14 | S 13
 $\frac{1}{4}$

1912

Subdivision of T. 23 S., R. 13 E.

Chains.

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high W. of cor.

42.25 Wagon road, from Hanksville, Utah, to Greenriver, Utah, bears NE. and SW.

50.00 Hollow, drains W.

Ascend.

63.90 Ridge, bears E. and W. 1 ch.

Descend

72.50 Wash in hollow, 40 lks. wide, 20 ft. deep, drains NE.

Gradually ascend.

80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 11, 12, 13 and 14 with brass cap marked 1

T 23 S	R 13 E
S 11	S 12
S 14	S 13

1912

dig pits, 18 x 18 x 12 ins. in each sec., 5 1/2 ft. dist., raise a mound of earth, 4 ft. base, 2 ft. high W. of cor.

Land rolling and hilly, draining S. on S. 35 chs. and NE. on N. 45 chs.

Soil, dry sand and gravel; 2nd. rate.

Sub-soil, hard dry sand and gravel. No timber.

Undergrowth, short shadscale.

Good grass for grazing.

N. 89° 52' E., on random line bet. secs. 12 and 13

110.00 Set temporary 1/4 sec. cor.

79.76 Intersect E. bdy. of the tp. 12 lks. S. of the cor. of secs. 7, 12, 13 and 18

Subdivision of T. 23 S., R. 13 E.

chains

heretofore described.

Thence I run

S. $89^{\circ} 47'$ W., on true line bet. secs. 12 and 13.

Gradually descend over rolling land sloping gently north, through deep sand and undergrowth of shadscale.

39.30 Wagon road, from Hanksville, Utah to Greenriver, Utah bears NE. and SW.

39.88 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S 12 ✓

$\frac{1}{4}$

S 13

1917

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.

55.50 Begin descent into hollow, bears N. and S.

61.00 Wash in hollow, 40 lks. wide, 10 ft. deep, drains NE.
Gradually ascend.

79.76 The cor. of secs. 11, 12, 13 and 14. Land, rolling with a general N. drain.

Soil, loose dry sand and gravelly; 2nd. rate.

Sub-soil, hard dry sand and gravel. No timber.

Undergrowth, short shadscale.

Good grass for grazing.

N. $0^{\circ} 01'$ W., bet. secs. 11 and 12.

Over rolling sandy land, through short undergrowth of shadscale. Gradually ascend.

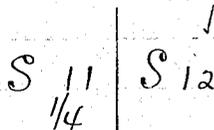
Subdivision of T. 23 S., R. 13 E.

chains

10.00 Low ridge, bears E. and W.
 Descend 50 ft. over land facing N. to
 23.50 Wash in hollow, 30 lks. wide, 10 ft.
 deep, drains E.

Gradually ascend.

40.00 Set an iron post, 3 ft. long, 1 in. in
 dia., 24 ins. in the ground for $\frac{1}{4}$
 sec. cor., with brass cap marked.



1912

dig pits, 18 x 18 x 12 ins., N. and S.
 of post, 3 ft. dist., raise a mound
 of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high W.
 of cor.

Note: The sky is overcast at noon,
 observations for lat. are impossible.
 At 1 P. M. Continuous storm of rain
 prevents field work the rest of day.

August 29, 1912.

September 10: At 7^h 57^m a.m. l.m.t.,
 I set off $78^{\circ} 50'$ on the lat. arc; $4^{\circ} 57'$
 N., on the decl. arc; and determine
 a meridian with the solar at this
 $\frac{1}{4}$ sec. cor.

Thence I run

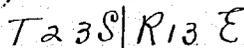
N. $0^{\circ} 01'$ W.

60.00 Begin descent into hollow, bears E.
 and W.

71.50 Wash in hollow, 1 ch. wide, 3 ft.
 deep, drains E.

Gradually ascend.

80.00 Set an iron post, 3 ft. long, 2 ins.
 in dia., 24 ins. in the ground for
 cor. of secs. 1, 2, 11 and 12, with
 brass cap marked.



1912

Subdivision of T. 23 S., R. 13 E.

Chaus

dig pits, 18 x 18 x 12 ins., in each sec.
 5 1/2 ft. dist., raise a mound of earth
 4 ft. base; 2 ft. high W. of cor.
 Sand rolling with an easterly drain.
 Soil, loose, dry sand and gravelly;
 2nd. rate.
 Sub-soil, hard dry sand and gravel.
 No timber.
 Undergrowth, short shadscale.
 Good grass for grazing.

Having retraced the east boundary
 of this tp. and knowing that my
 falling at the cor. of secs. 1, 6, 7 and
 12 will be out of limits and a closing
 cor. will be necessary.

I run

East on random line bet. secs. 1 and
 12 for distance only.

40.00

Set temporary 1/4 sec. cor. 1

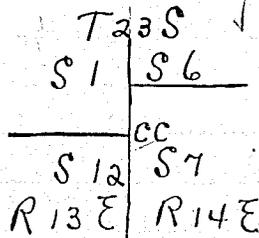
79.61

Intersect E. bdy. of the tp. 66 lks.

S. 0° 03' E., of the cor. of secs. 1, 6, 7
 and 12 heretofore described.

At my intersection with the tp. bdy.,

Set an iron post, 3 ft. long, 2 ins.
 in dia., 24 ins. in the ground for
 closing cor. of secs. 1 and 12, with
 brass cap marked.



1912

raise a mound of stone, 2 ft. base,
 1 1/2 ft. high W. of cor.

I destroy all marks on old cor.
 pertaining to secs. 1 and 12 of
 T. 23 S., R. 13 E.

Subdivision of T. 23 S., R. 13 E.

Chains

- Thence I run
West on true line bet. secs. 1 and
12.
Over mountainous land along
S. face of rocky breaks.
Soil, sandy and solid bed rock.
Undergrowth, some short shadscale.
Ascend 50 ft. to
3.80 Top of sandstone ridge, bears NW.
and SE.
Descend
19.60 Hollow, 50 ft. deep, drains SE.
Ascend
28.40 Solid sandstone spur, projects S.
Descend
31.60 Hollow, drains SE.
Ascend.
39.80 1/4 Set an iron post, 3 ft. long, 1 in.
in dia., 24 in. in the ground for
1/4 sec. cor., with brass cap marked

$$\begin{array}{r} S 1 \checkmark \\ \hline 1/4 \\ S 12 \\ 1912 \end{array}$$

raise a mound of stone, 2 ft. base,
1 1/2 ft. high N. of cor.
43.10 Sandstone spur, 50 ft. high, projects
S.
Descend 30 ft. to
59.60 Hollow, drains SE.
Ascend.
70.00 Sandstone spur, projects S.
Descend 30 ft. to
79.61 The cor. of secs. 1, 6, 7 and 12.
Land, mountainous draining S.
Soil, dry sand and solid sand-
stone bed rock: 4 th. rate.
Sub-soil, hard dry sand and rocky.
No timber.

Subdivision of T. 23 S., R. 13 E.

chains.

Undergrowth, short shade scale.
Some good grass for grazing purposes.
Mountainous land, 79.61 cho.

Howard W Miller
U. S. Surveyor.

September 24: At 7^h. 52^m. a. m. l. m. t.
I set off 38° 50' on the lat. arc; 0° 27'
S., on the decl. arc; and determine
a meridian with the solar at the
cor. of secs. 1, 2, 11 and 12.

Thence I run
N. 0° 01' W., on random line bet. secs.
1 and 2.

140.00 Set temp. 1/4 sec. cor. 1
79.85 Intersect N. bdy. of the tp. 62 lks.

N. 89° 59' E., of the cor. of secs. 1, 2,
35 and 36. heretofore described.

At my intersection,
Set an iron post, 3 ft. long, 2 ins.
in diam., 24 ins. in a mound of
stone and earth, 4 ft. base, 2 ft.
high for closing cor. of secs. 1 and
2, with brass cap marked.

T 22 S R 13 E ✓
S 35 cc S 36

S 2 | S 1

T 23 S

1912

raise a mound of stone, 2 ft. base,
1 1/4 ft. high S. of cor.

Note: On account of natural
obstacles, I am unable to set post in
the ground. I destroy all marks on old cor. per-
petuating to secs. 1 and 2.
Thence I run

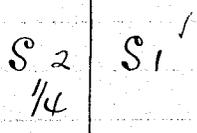
S. 0° 01' E., on true line bet. secs. 1
and 2.

1.85 Over nearly level mesa.
Leave mesa, bears NW. and SE.

Subdivision of T. 23 S., R. 13 E.

chains

- 4.00 Descend abruptly 40 ft. to Dry gulch, drains E.
- 8.00 Ascend abruptly 40 ft. to Low spur, projects NE.
- 25.00 Gradually descend Dry gulch, 60 ft. below spur, drains NE.
- 30.00 Ascend abruptly over N. slope to Edge of mesa, bears NW. and SE. Thence across nearly level mesa.
- 39.85 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked



1912

- dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., raise a mound of earth, $3\frac{1}{4}$ ft. base, $1\frac{1}{2}$ ft. high W. of cor.
- 47.90 Edge of mesa, bears E. and W. Gradually descend.
- 57.90 Dry gulch, 30 ft. below mesa, drains SE. Gradually ascend over NE. slope.
- 63.90 Spur, projects SE. Gradually descend 40 ft. to
- 79.85 The cor. of secs. 1, 2, 11 and 12 Land rolling mountainous and mesa, with a general E. exposure. Soil, light, fine, dry, warm, sandy clay, rich in gypsum, 6 to 30 ins. deep, on sandstone bed rock. No timber. Undergrowth, scattering shadescale, rabbit brush and salt sage. Some grazing throughout the mile. The mesa lands are suited to

Subdivision of T. 23 S., R. 13 E.

chains.

cultivation if watered.
 Mountainous land 66.95 chs.

Robert E. Clark
 U. S. Transitman.

August 30: At 8^h. 01^m. a.m. l.m.t.,
 I set off 38° 46' on the lat. arc; 9° 01' N., on the decl. arc; and determine a meridian with the solar at the cor. of secs. 34 and 35 on the S. bdy. of the tp. heretofore described.

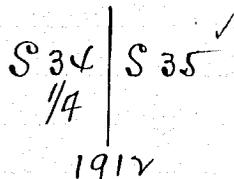
Thence I run N. 0° 01' W., bet. secs. 34 and 35. Over rolling land draining NE., through short undergrowth of shade-scale.

Gradually ascend.

25.00 Low spur, projects E. about 5 chs. Descend.

30.00 Hollow, 30 ft. deep, drains NE. Ascend 30 ft. to

40.00 Spur, projects E. Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked



raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor. Descend into hollow.

50.00 Iron Spring wash, 5 chs. wide, drains NE.

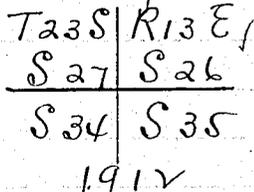
60.00 Begin to ascend.

67.00 Top of south side of flat bench, bears E. and W. Thence across bench

Subdivision of T. 23 S., R. 13 E.

chains

- 78.00 Leave bench, bears E. and W.
Descend abruptly
- 79.00 Gulch, 30 ft. deep drains NE.
Ascend 25 ft. to
- 80.00 Set an iron post, 3 ft. long, 2 ins.
in dia., 24 ins. in the ground
for cor. of secs. 26, 27, 34 and 35
with brass cap marked



raise a mound of stone, 2 ft. base,
1 1/2 ft. high W. of cor.
Land, rolling and hilly with a
general NE. drain.
Soil, loose dry sand and gravelly;
2nd rate.
Sub-soil, hard dry sand and gravel.
No timber.
Undergrowth, short shadscale.
Good grass for grazing.

- East, on random line, bet. secs.
26 and 35
- 40.00 Set temporary 1/4 sec. cor.
- 79.98 Intersect N. and S. line 12 lks. S. of
the cor. of secs. 25, 26, 35 and 36.
Thence I run
S. 89° 55' W., on true line bet. secs.
26 and 35.
Over rough mountainous land.
Ascend along S. face of pinnacle
- 4.00 Spur, projects S.
Descend abruptly 75 ft. to
- 8.00 Base of pinnacle and leave
mountainous land bears N. and
S.
Enter sandy bottom and greasewood

Subdivision of T. 23 S., R. 13 E.

chains.

undergrowth.

Thence along north side of Iron Spring wash.

39.99 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S 26 $\frac{1}{4}$

S 35

1912

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., raise a mound of earth, $3\frac{1}{4}$ ft. base, $1\frac{1}{2}$ ft. high N. of cor.

Note: The junction of Straight Canyon wash and Iron Spring wash is S. about 15 chs.

44.00 Wash, 25 chs. wide, 2 ft. deep, drains S.

72.00 Straight Canyon wash, 3 chs. wide, drains S. 80° E.

Leave sandy bottom and greasewood undergrowth, bears NW. and SE. Enter mountainous land.

75.00 Ascend 35 ft. to spur, projects N.

77.50 Descend 30 ft. to gulch, drains NE.

Ascend 25 ft. to

79.98 The cor. of secs. 26, 27, 34 and 35. Land, level and mountainous. with an easterly drain.

Soil, deep, loose, dry sand and rocky; 2nd. and 4th. rates.

Sub-soil, sandy and rocky.

No timber

Undergrowth, greasewood on 64 chs. Some good grass for grazing throughout the mile.

Subdivision of T. 23 S., R. 13 E.

Chains:

Mountainous land on 16.00 chs.

N. $0^{\circ} 01'$ W, bet. secs. 26 and 27.

Over rolling mountainous land through short undergrowth of shade-cale and some scattering greasewood.

Ascend 15 ft. to

220 Spur, projects E.

Descend into hollow.

13.20 Straight Canyon Wash in hollow, 200 chs. wide, 7.5 ft. below spur, drains E.

Gradually ascend

19.00 Begin steep ascent from hollow.

25.00 Top of N. side of hollow, 75 ft. above wash, bears E. and W.

Hence over rolling bench lands.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S 27 | S 26
 $\frac{1}{4}$

1917

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.

August, 30: At this $\frac{1}{4}$ sec. cor. I set off $8^{\circ} 57'$ N., on the decl. arc; and at $12^{\text{h}} 01^{\text{m}}$ p.m. l.m. t., observe the sun on the meridian; the resulting lat. is $38^{\circ} 47'$

78.00 Wash, 25 lks. wide, 5 ft. deep, drains E.

80.00 Set an iron post, 3 ft. long, 2 in. in dia., 24 ins. in the ground for cor. of secs. 22, 23, 26 and 27, with brass cap marked

Subdivision of T. 23 S., R. 13 E.

chains.

T 23 S	R 13 E ^v
S 22	S 23
S 27	S 26

1912.

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Land, mount airous and rolling brush land, with a general E. drain.

S. 25 chs. mount airous land covered with shadscale and greasewood.

undergrowth. soil, gravelly, sandy and gypsum on hard, dry sand, gravel and gypsum sub-soil.

N. 55 chs. rolling brush land.

covered with a short shadscale undergrowth. soil, a light dry clay, sand and gypsum on hard gypsum and gravel sub-soil. Some good grass for grazing.

No timber.

Mount airous land 25.00 chs.

N. 89° 55' E., on random line bet. secs. 23 and 26.

40.00 Set temporary 1/4 sec. cor. 1

80.04 Intersect N. and S. line 2 lks. S. of the cor. of secs. 23, 24, 25 and 26

Thence, 2 run

S. 89° 54' W., on true line bet. secs. 23 and 26.

Over hilly land, through deep sand and undergrowth of short shadscale.

Ascend 10 ft. to

2.00 Low ridge, bears N. and S.

Thence descend over land sloping SW.

40.02 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4

Subdivision of T. 23 S., R. 13 E.

chain.

sec. cor., with brass cap marked

S 23 ✓

1/4

S 26

1912

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high N. of cor.

52.40 Thence over rolling gypsum hills Wash, 30 lks. wide, 5 ft. deep, drains SE.

64.30 Wash, 30 lks. wide, 10 ft. deep, drains SE.

80.00 The cor. of secs. 22, 23, 26 and 27. Land, hilly, with a general S. exposure.

Soil, loose, dry sand, gravelly and gypsum on hard dry sand, gravel, and gypsum. Some sandstone outcroppings on mile.

No timber.

Undergrowth, short shadscale.

Some good grass for grazing.

August 30, 1912

September 9: Storm of rain prevents field work until 9:30 am.

At 9^h 42^m. a.m. l.m.t., I set off 38° 48' on the lat. arc; 5° 18' N., on the decl. arc; and determine a meridian with the solar at the cor. of secs. 22, 23, 26 and 27.

Thence I run

N. 0° 01' W., bet. secs. 22 and 23.

Gradually descend over rolling hilly land draining SE., through short undergrowth of shadscale.

24.00 Wash, 50 lks. wide, 10 ft. deep,

Subdivision of T. 23 S., R. 13 E.

chains.

drains SE.

Gradually ascend.

31.40 Wagon road from Hawkville, Utah to Chewriver., Utah, bears N. 30° E. and S. 30° W.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked

S 22	S 23
1/4	

1912

dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist, raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high W. of cor.

65.00 Low ridge, 50 ft. high, bears E. and W.

Gradually descend.

80.00 Set an iron post, 3 ft. long, 2 in. in dia., 24 ins. in the ground for cor. of secs. 14, 15, 22 and 23, with brass cap marked

T 23 S	R 13 E
S 15	S 14
S 22	S 23

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Land, hilly with a general East exposure.

Soil, loose, sand, gravelly and some gypsum on hard, dry sand gravel and gypsum; 3rd. rate. No timber.

Undergrowth, short shadscale. Good grass for grazing.

Subdivision of T. 23 S., R. 13 E.

Chains	
	N. $89^{\circ} 54' E.$, on random line bet. secs. 14 and 23.
40.00	Set temp: $\frac{1}{4}$ sec. cor. ↓
79.97	Intersect N. and S. line 12 lks. N. of the cor. of secs. 13, 14, 23 and 24. Thence, I run S. $89^{\circ} 59' W.$, on true line bet. secs. 14 and 23.
	Over rolling land draining SW., through short undergrowth of shade oak.
	Gradually ascend. ↓
39.96	Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in $\frac{1}{4}$ mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked
	$\begin{array}{r} S 14 \downarrow \\ \frac{1}{4} \\ \hline S 23 \end{array}$
	1912
	raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.
	Note: On account of natural obstacles I am unable to set post in the ground.
40.30	Wagon road, from Hawksville, Utah to Green River, Utah, bears NE. and SW.
50.40	Low ridge, bears NW. and SE. Descend.
60.00	Hollow, 25 ft. deep, drains SE. Ascend
68.40	Low spur, projects S. Descend.
74.30	Wash in hollow, 20 lks. wide, 10 ft. deep, drains SE. Gradually ascend.
79.97	The cor. of secs. 14, 15, 22, and 23. Land, rolling hills with a general

Subdivision of T. 23 S., R. 13 E.

chain

S. exposure.
Soil, hard, dry sand; rocky; clay and some gypsum, on hard dry clay and sand sub-soil. Sandstone bed rock close to surface on W. $\frac{1}{4}$ mile.

No timber.

Undergrowth, short shadscale.

Good grass for grazing on E. $\frac{1}{4}$ mile.

11th a.m., heavy storm of rain prevents field work until 2:30 P.M.

The sky is overcast at noon observations for lat. are impossible.

N. $0^{\circ} 01'$ W., bet. secs. 14 and 15.

Over rolling mountainous land draining SE, through short undergrowth of shadscale.

Descend.

10.00 Wash in hollow, 25 lks. wide, 10 ft. deep, drains SE.

Ascend 20 ft. to

21.20 Spur, projects SE.

Descend

23.50 Small hollow, drains SE.

Ascend.

26.60 Top of ridge, 50 ft. high, bears E. and W.

Descend 30 ft. to

32.50 Wash in hollow, 25 lks. wide, 5 ft. deep, drains NE.

Thence gradually ascend over land facing nearly E.

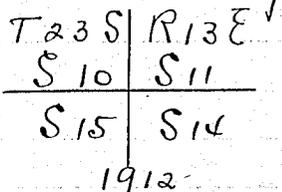
40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked.

S 15 | S 14 ✓
1/4 |
1912

Subdivision of T. 23 S., R. 13 E.

Chains

- raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.
- 54.80 Low ridge, bears E. and W.
Gradually descend.
- 60.00 Wash in hollow, 60 lks. wide, 10 ft. deep, drains E.
Gradually ascend.
- 80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 10, 11, 14 and 15, with brass cap marked



raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.

Land, rolling mountainous with a general east exposure.

Soil, gravelly, rocky and some gypsum on rocky and gypsum sub-soil, very poor.

No timber.

Undergrowth, scattering short shade-scale.

Some grass for grazing purposes.

Mountainous land, 80.00 cho.

- 40.00 N. $89^{\circ} 59' E.$, on random line bet. secs. 11 and 14.
- 79.92 Set temp. 1/4 sec. cor.
- Intersect N. and S. line 5 lks. S. of the cor. of secs. 11, 12, 13 and 14
- Thence, I run
- S. $89^{\circ} 57' W.$, on true line bet. secs. 11 and 14.
- Over rolling sandy land sloping S., through short undergrowth of shade-scale.

Subdivision of T. 23 S., R. 13 E.

Chains

35.00 Gradually ascend.
Leave rolling land, bears NW.
and SE. Enter mountainous land.
Ascend NE. face of ridge.

39.96 Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in a mound of stone
and earth, 4 ft. base, 2 ft. high for
1/4 sec. cor., with brass cap marked

$$\begin{array}{r} S 11 \frac{1}{4} \\ \hline \end{array}$$

S 14

1912

raise a mound of stone, 2 ft. base,
1 1/2 ft. high N. of cor.

Note: On account of natural obstacles,
I am unable to set post in the
ground.

45.00 Top of ridge, 75 ft. high, bears NW.
5 chs. and SE

Descend abruptly.

50.00 Hollow, 50 ft. deep, drains NE.
Ascend 30 ft. to.

65.00 Spur, projects S. 2 chs.
Gradually descend.

79.92 The cor. of secs. 10, 11, 14 and 15.

Land, rolling and mountainous
with a general east exposure.

E. 35 chs. rolling land sloping gently
S. soil, loose, sand, and gravel on
sand and gravel sub-soil, very good.
Undergrowth short shadscale.

W. 44.96 chs. mountainous land.

Soil, gravelly, sandy and sandstone
bed rock on rocky, hard gravel and
bed rock sub-soil. Undergrowth
short shadscale.

No timber.

Good grass for grazing purposes
throughout the mile

Subdivision of T. 23 S., R. 13 E.

Chaus.

Mountainous land on 44.96 chs.
At 4 P.M., heavy storm of rain
prevents field work for the rest of the
day.

September 9, 1912

September 10: For solar observation
see line bet. secs. 11 and 12.

$N. 0^{\circ} 01' W.$, bet. secs. 10 and 11.

Over rolling mountainous land
sloping E., along base of the San
Rafael reef. Undergrowth short
shadscale.

Gradually ascend.

10.00 Low ridge, 40 ft. above sec. cor.,
bears $N. 60^{\circ} W.$, and $S. 60^{\circ} E.$

Descend 40 ft. to

16.00 Hollow, drains E.

Gradually ascend.

30.60 Low rocky ridge, bears $N. 60^{\circ} E.$ and
S.W.

Descend 40 ft. to

36.00 Rocky hollow, drains S.E.

Ascend 50 ft. to

40.00 Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in the ground for $\frac{1}{4}$
sec. cor., with brass cap marked

S 10	S 11
$\frac{1}{4}$	.

1912

raise a mound of stone, 2 ft. base,
 $1\frac{1}{2}$ ft. high W. of cor.

September 10: At this $\frac{1}{4}$ sec. cor., I
set off $4^{\circ} 53' N.$, on the decl. arc;
and at $11^{\text{h}} 57^{\text{m}}$ a.m. l.m. t., observe
the sun on the meridian; the
resulting lat. is $38^{\circ} 50'$

Gradually ascend

Subdivision of T. 23 S., R. 13 E.

chains.

54.50

Spur, projects E.
Enter rough mountainous land
and east edge of the breaks of the
San Rafael Reef.

57.00

Descend abruptly over ledges 125 ft. to
Wash in canyon, drains E.

62.50

Ascend abruptly over ledges 150 ft. to
Top of rocky point, projects E. 300 chs.
and base of high ledges which tilt
at an angle of 40° to 60° . I am
unable to keep on my true line
from this point on account of these
ledges, and in order that I may
establish the cor. point of secs. 2, 3,
10 and 11, I run on traverse line
from this point as follows:

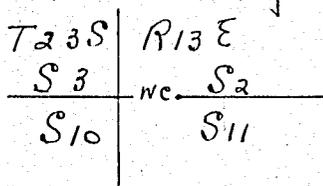
N. 22° E., 1.50 chs., thence

N. 14° E., 7.90 chs., thence

N. $4^{\circ} 15' W.$, 7.60 chs., thence

80.00

North 86 lks. to a northing of
thence W. 91 lks. After a diligent
attempt I am unable to reach the
true cor. point of secs. 2, 3, 10 and
11 on account of impassible ledges.
Therefore at this point, which is 100
chs. E. of the true cor. point of secs.
2, 3, 10 and 11, I set an iron
post, 3 ft. long, 2 ins. in dia., 24
ins. in a mound of stone, 4 ft.
base, 2 ft. high for wit ness cor.
to secs. 2, 3, 10 and 11, with brass
cap marked



1912

raise a mound of stone, 2 ft. base,
 $1\frac{1}{2}$ ft. high W. of cor.

Subdivision of T. 23 S., R. 13 E.

Chains:

Note: On account of natural obstacles, I am unable to set post in the ground.

Land, mountainous with an easterly exposure.

Soil, solid bed rock of sandstone formation, gravelly and gypsum on rocky and hard gypsum sub-soil, very poor.

No timber

Undergrowth, some short shadscale.

Some good grass for grazing on S. Ho. 00 chs.

Rough mountainous land on N. 25.50 chs.

N. $89^{\circ} 57' E$, on random line bet. secs. 2 and 11, counting distances from true cor. point.

Ho. 00 Set temporary $\frac{1}{4}$ sec. cor.

79.88 Intersect N. and S. line 19 lks. N. of the cor. of secs. 1, 2, 11 and 12

Thence, I run

N. $89^{\circ} 55' W$, on true line bet. secs. 2 and 11

Over rolling mountainous land along S. face of rocky breaks.

Undergrowth, short shadscale.

20.00 Wide hollow, drains SE.

Gradually ascend.

30.00 Low spur, projects SE.

Gradually descend 30 ft. to

36.00 Hollow, drains SE.

Thence over land facing N.

39.94 Set an iron post, 3 ft. long, 1 in. in dia., 24 in. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S 2
 $\frac{1}{4}$

S 11

1912

Subdivision of T. 23 S., R. 13 E.

chains.

dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high N. of cor.

44.00 Same hollow, drains N. 80° E.
Ascend.

46.00 Enter gravelly brush, bears N. and S.
Gradually ascend.

65.00 Base of the Breaks of the San Rafael Reef, bears N. and S.

Ascend abruptly over east face of ledges 200 ft. to

78.88 The witness cor. to secs. 2, 3, 10 and 11.

True cor. point of secs. 2, 3, 10 and 11 cannot be reached.

Land mountainous and rolling with an easterly drain.

East 46 chs. rolling mountainous land. soil, gravelly and rocky on hard clay and gravel sub-soil, very poor. Undergrowth short shadscale.

Next 19 chs. gently rolling brush land with an easterly exposure. Soil, sandy and gravelly on gravel and sandy sub-soil, very good. Undergrowth short shadscale. Good grass for grazing.

W. 13.88 chs. rough mountainous land facing E. Soil solid bed rock and rocks, very poor. No timber.

Mountainous land 59.88 chs.

The line bet. secs. 2 and 3 passes along the top of the breaks of the San Rafael Reef which consist of broken sandstone ledges and are tilted at an angle of 50 to 75°. It is

Subdivision of T. 23 S., R. 13 E.

Chauis.

impossible to follow this line in any manner and therefore cannot be surveyed.

September 10, 1912

August 31; at 8^{h.} 00^{m.} a.m. l.m.f., I set off 38° 46' on the lat. arc; 8° 40' N. on the decl. arc; and determine a meridian, with the solar at the cor. of secs. 33 and 34 on the S. bdy. of the tp. heretofore described.

Thence I run

N. 0° 02' W., bet. secs. 33 and 34.

Over broken mountainous land draining E., through short undergrowth of shadscale.

Ascend 20 ft. to

3.00 Rocky spur, projects NE.

Descend abruptly over ledges into canyon.

10.20 Bottom of canyon and wash, 50 lks. wide, 80 ft. below spur, drains E.

16.00 Ascend abruptly over ledges 100 ft. to top of N. side of canyon, bears E. and W.

Thence over broken land facing nearly east, gradually descending.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high, for 1/4 sec. cor., with brass cap marked

S 33 | S 34
1/4

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles

Subdivision of T. 23 S., R. 13 E.

chains.

- I am unable to set post in the ground.
- 56.00 Hollow, 40 ft. deep, drains E. Ascend.
- 63.00 Spur, projects E. Descend abruptly over ledges into canyon.
- 69.50 Wash in canyon, 50 lks. wide, 100 ft. below spur, drains E. Ascend abruptly over ledges to
- 75.00 Low ridge, bears E. and W. Descend 25 ft. to
- 78.20 Hollow, drains NE. Ascend 15 ft. to
- 80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 27, 28, 33 and 34 with brass cap marked

T 23 S	R 13 E. v
S 28	S 27
S 33	S 34

1914

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

Land, mountainous with a general E. exposure.

Soil, gravelly and rocky of volcanic formation on hard clay and rock sub-soil; very poor.

No timber.

Undergrowth some short shadscale.

Some good grass for grazing purposes.

Mountainous land, 80.00 chs.

East, on random line, bet. secs 27

Subdivision of T. 23 S., R. 13 E.

Chaus

- and 34.
 Ho.00 Set temporary $\frac{1}{4}$ sec. cor.
 80.10 Intersect N. and S. line at the cor.
 of secs. 26, 27, 34 and 35
 Thence I run
 West, on true line bet. secs. 27 and
 34.
 Gradually ascend over stony ground
 sloping east, through short under-
 growth of shadscale.
 5.00 Enter nearly level sandy bench,
 bears NE. and SE.
 Thence across bench.
 Ho.05 Set an iron post, 3 ft. long, 1 in. in
 dia., 24 in. in the ground for $\frac{1}{4}$
 sec. cor., with brass cap marked

$$\begin{array}{r} S 27 \frac{1}{4} \\ \hline S 24 \\ 1912 \end{array}$$

 dig pits, 18 x 18 x 12 in., E. and W.
 of post, 3 ft. dist., raise a mound
 of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high N. of
 cor.
 56.20 Wagon road, from Hanksville, Utah
 to Green River, Utah bears N. and S.
 72.00 Leave nearly level bench, bears NE.
 and SW.
 Descend 30 ft. to
 76.00 Hollow, drains NE.
 Ascend.
 80.10 The cor. of secs. 27, 28, 33 and 34.
 Land, rolling, with a general east
 exposure.
 Soil, stony, gravelly and sandy,
 on hard dry sand and gravel sub-
 soil. Soil on bench land very fertile
 and would produce crops if watered.
 Good grass for grazing purposes

Subdivision of T. 23 S., R. 13 E.

chain.

No timber.

Undergrowth, short shade-scape.

August 31: At this sec. cor., I set off $8^{\circ} 35' N.$, on the decl. arc; and at $12^{\text{h}} 00^{\text{m}}$ m. l. m. t., observe the sun on the meridian; the resulting lat. is $38^{\circ} 47'$.

$N. 0^{\circ} 02' W.$, bet. secs. 27 and 28.

Over broken mountainous land draining East, through short undergrowth of shade-scape.

Gradually ascend 20 ft. to

5.00 Low spur, projects E.

Descend 75 ft. to

11.00 Wash in canyon, 50 lks. wide, drains E.

Ascend abruptly 100 ft. over ledges to

15.00 Top of north side of canyon, bears E. and W.

Gradually ascend.

22.50 Spur, projects NE.

Descend

26.00 Hollow, 50 ft. deep, drains NE.

Ascend.

32.50 Spur, projects NE.

Descend.

34.20 Hollow, 50 ft. deep, drains E.

Note: Large water pockets up hollow about 8 hrs.

Gradually ascend.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked

$\begin{array}{c} | \\ S28 \quad S27 \\ | \\ \frac{1}{4} \end{array}$

1912

Subdivision of T. 23 S., R. 13 E.

chains

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

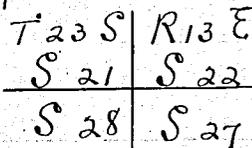
Note: On account of natural obstacles, I am unable to set post in the ground

August 31, 1912

September 6: At 6^h. 58^m. a.m. l.m.t., I set off 38° 48' on the lat. arc; 6° 29 1/2' N., on the decl. arc; and determine a meridian with the solar at this 1/4 sec. cor.

Thence I run
N. 0° 02' W.

- 45.00 Spur, projects E.
Descend abruptly, 125 ft. to
- 51.50 Bottom of Straight Canyon and wash, 1 ch. wide, drains E.
Ascend abruptly from canyon.
- 58.00 Top of north side of canyon, 125 ft. above base, bears E. and W.
Thence over broken land facing E.
Gradually ascend.
- 80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 21, 22, 27 and 28, with brass cap marked



1912.

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Land mountainous with a general east exposure.

Soil, loose rocks, gravelly and some light dry clay, on hard, dry clay and rock sub-soil, very poor.

No timber.

Undergrowth, some short shade-leaf

Subdivision of T. 23 S., R. 13 E.

Chains.

Some grass for grazing purposes.
Mountainous land 80.00 chs.

East, on random line bet. secs. 22 and 27.

40.00 Set temp. $\frac{1}{4}$ sec. cor. ✓

80.14 Intersect N. and S. line 9 lks. N. of the cor. of secs. 22, 23, 26 and 27.

Thence I run

N. $89^{\circ} 56'$ W., on true line bet. secs. 22 and 27.

Over rolling mountainous bench land, through short undergrowth of shadscale.

17.70 Wagon road, from Hanksville Utah to Green River, Utah bears N. and S.

35.00 Gulch, 25 ft. deep, drains S. Heads about 5 chs. N.

Ascend.

38.50 Low spur, projects S.

descend abruptly 35 ft. to

40.07 Bottom of gulch, drains S.

Point for $\frac{1}{4}$ sec. cor. in gulch where cor. would be washed away. No cor. set

Ascend.

40.20 Set an iron post, 3 ft. long, 1 in.

in dia., 24 ins. in the ground for witness cor. to the $\frac{1}{4}$ sec. cor., with brass cap marked.

T 23 S R 13 E ✓

S 22 wc $\frac{1}{4}$

S 27

1912

raise a mound of stone, 2 ft. base, $\frac{1}{4}$ ft. high N. of cor.

55.00 Long flat spur, projects S.

descend 50 ft. to

Subdivision of T. 23 S., R. 13 E.

Chains.

- 69.00 Wash in hollow, 25 lks. wide, 5 ft. deep, drains S.
Ascend 40 ft. to
- 80.14 The cor. of secs. 21, 22, 27 and 28.
Land rolling mountainous bench land, with a general east exposure. Soil, gravelly, rocky, dry clay and some gypsum on hard dry clay, rock and gypsum sub-soil, very poor.
No timber.
Undergrowth short shadscale.
Some good grass for grazing purposes.
Mountainous land, 80.14 chs.
September 6: at this sec. cor., I set off $6^{\circ} 23' N.$, on the decl. arc; and at $11^h. 58^m.$ a.m. l.m. t., observe the sun on the meridian; the resulting lat. is $38^{\circ} 48'$
-
- $N. 0^{\circ} 0' W.$, bet. secs. 21 and 22.
Over broken mountainous land sloping east, across numerous spurs and gulches. Undergrowth, some short shadscale.
Descend.
- 0.80 Gulch, 30 ft. deep, drains E.
Thence gradually ascend along base of the San Rafael Reef.
- 8.00 Low ridge, bears E. and W.
Gradually descend
- 17.00 Hollow, 30 ft. deep, drains E.
Ascend 50 ft. to
- 27.20 Ridge, bears NW. and SE.
Descend abruptly
- 30.50 Gulch, cut in solid sandstone, drains SE.
Begin steep ascent over east slope of the San Rafael reef; up ledges and

Subdivision of T. 23 S., R. 13 E.

Chains.

39.85 across huge sandstone boulders.
 The point for the $\frac{1}{4}$ sec. cor. will fall on steep slope of solid sandstone bed rock, where cor. cannot be set, therefore at this point set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone, 4 ft. base, 2 ft. high for witness cor. to the $\frac{1}{4}$ sec. cor., with brass cap marked

T 23 S. R 13 E[✓]
 WC $\frac{1}{4}$

§ 21 | S 22

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

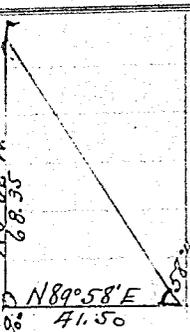
40.00 Point for $\frac{1}{4}$ sec. cor. falls on steep slope of solid bed rock. Mark + for exact cor. point.
 This point is situated about 300 ft. above the sec. cor.

September 6, 1912.

September 11: At 7^h. 57^m. a.m. l.m. t., I set off $38^{\circ} 48'$ on the lat. arc; $4^{\circ} 34'$ N., on the decl. arc; and determine a meridian with the solar at the cor. of secs. 21, 22, 27 and 28.

It being impossible to chain my line north from the $\frac{1}{4}$ sec. cor. bet secs. 21 and 22 on account of the high breaks of the San Rafael Reef which consist of broken sandstone ledges tilted from 45° to 70° I am compelled to triangulate to the top of the reef from this point as follows:

Subdivision of T. 23 S., R. 13 E.



chain

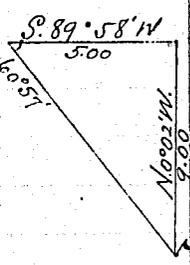
Set a flag on line on top of reef, $N. 0^{\circ} 02' W.$, then measure a base line $N. 89^{\circ} 58' E.$, 41.50 chs. By the mean of 3 readings, I find that the base line subtends an angle of $58^{\circ} 44'$ to the flag, therefore $\tan 58^{\circ} 44' \times$ base or 1.64687×41.50 chs. makes

68.35

To top of San Rafael Reef and ledges, about 1000 ft. above sec. cor. bears NE. and SW.

69.00

Top of perpendicular sandstone ledge 500 ft. high and west edge of the San Rafael reef, bears NE. and SW. To determine distance down ledge, I erect a signal at this point, then place my transit on line in bottom of canyon $N. 0^{\circ} 02' W.$, from my transit I measure a base line $S. 89^{\circ} 58' W.$, 5.00 chs. to a point from which the base line subtends an angle of $60^{\circ} 57'$ to my signal on top of ledge, therefore $\tan 60^{\circ} 57' \times$ base or 1.80×5 chs. = 9.00 chs. which added to 69.00 chs., makes



78.00

To bottom of canyon and base of reef, 600 ft. below top, drains NE. Gradually ascend.

80.00

Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 15, 16, 21 and 22 with brass cap marked

T 23 S	R 13 E
S 16	S 15
S 21	S 22

191v

raise a mound of stone, 2 ft. base, $1\frac{1}{4}$ ft. high W. of cor.
 Note: On account of natural

Subdivision of T. 23 S., R. 13 E.

chains.

obstacles, I am unable to set post in the ground.

Land, rough mountainous with steep E. and NW. slopes of the San Rafael Reef.

Soil, chiefly solid sandstone bed rock and rocky. on S. 27 chs. some gravelly soil mixed with a light dry clay.

No timber.

Undergrowth, some short shadscale

No grass or other vegetation.

Mountainous land on 80.00 chs.

September 11: At this sec. cor., I set off $4^{\circ} 30' N.$, on the decl. arc; and at $11^{\text{h}}. 57^{\text{m}}. a. m. l. m. t.$, observe the sun on the meridian; the resulting lat. is $38^{\circ} 49'$

S. $89^{\circ} 56' E.$, on random line bet. secs. 15 and 22.

40.00 Set temporary $1/4$ sec. cor. ✓

80.10 Intersect N. and S. line 12 lks. S. of the cor. of secs. 14, 15, 22 and 23
Thence, I run

S. $89^{\circ} 59' W.$, on true line bet. secs. 15 and 22.

Over rolling mountainous country draining SE., through short undergrowth of shadscale and some greasewood.

Gradually ascend.

24.00 Enter solid sandstone bed rock, bears N. and S.

27.00 Low spur, projects SE.

Descend 50 ft. to.

31.70 Dry gulch, drains SE.

Gradually ascend over broken ground.

40.05 Set an iron post, 3 ft. long, 1 in. in

Subdivision of T. 23 S., R. 13 E.

chaucis.

dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked

$$\begin{array}{r} S 15^{\circ} \\ \frac{1}{4} \\ \hline S 22 \\ 191v \end{array}$$

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

- 44.00 Low rocky ridge, bears NE. and SW. Descend
- 47.30 Hollow, 50 ft. deep, drains NE. Ascend.
- 56.00 Base of San Rafael Reef, bears N. 20° E., and SW. Begin very steep ascent over solid sandstone bed rock facing E.
- 64.15 Top of San Rafael Reef, 400 ft. above the $\frac{1}{4}$ sec. cor., bears N. 20° E., and SW. Descend abruptly over high sandstone ledges on west side of reef.
- 76.00 Base of ledges and wash in canyon, 50 lbs. wide, 350 ft. below top, drains SE. An opening of canyon through the reef, starts S. 4 chs. Gradually ascend.
- 80.10 The cor. of secs. 15, 16, 21 and 22. Land rolling mountainous and rough mountainous. E. 56 chs. rolling mountainous land with a general E. exposure. soil, gravelly, gypsum and surface rock of sandstone formation, on hard dry clay and rocky sub-soil, very poor.

Subdivision of T. 23 S., R. 13 E.

chains.

No timber. Undergrowth, some short
shadscale and greasewood. Some
good grass for grazing purposes.
W. 24. 10 chs. rough mountainous
land with steep E. and W. slopes
of the San Rafael Reef. Soil, solid
surface rock of sandstone formation.
No vegetation of any kind.

Mountainous. Land 80.10 chs.

September 11, 1912
Stoward W. Miller
U. S. Surveyor.

September 13, 1912: At 2^h. 30^m. p.m. l.
m. t., I set off $38^{\circ} 49'$ on the lat. arc;
 $3^{\circ} 41' N.$, on the decl. arc; and
determine a meridian with the
solar at the cor. of secs. 15, 16, 21 and
22.

Thence I run

$N. 0^{\circ} 02' W.$, bet. secs. 15 and 16.

Gradually ascend over mountainous
land, along SE. slope, over numerous
sandstone boulders and through
scattering undergrowth of shadscale.

6.00 Ascend very abruptly over SE. slope
of solid surface rock.

Enter scattering scrub cedar timber.

40.00 Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in a mound of stone
and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$
sec. cor., with brass cap marked

$\frac{1}{4}$	✓
S 16	S 15
1912	

raise a mound of stone, 2 ft. base,
 $1\frac{1}{2}$ ft. high W. of cor.

Note: on account of natural obstacles,
I am unable to set post in the ground.

Subdivision of T. 23 S., R. 13 E.

chain

- This cor. stands about 800 ft. above the sec. cor.
 Ascend more gradually.
 63.00 Top of spur, 200 ft. above $\frac{1}{4}$ sec. cor., projects E.
 Descend abruptly.
 69.00 Dry canyon, about 120 ft. deep, course E.
 Ascend abruptly.
 75.70 Spur, 175 ft. high, projects E.
 Descend N.E. slope.
 80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 9, 10, 15 and 16, with brass cap marked ✓

T 23 S	R 13 E
S 9	S 10
S 16	S 15

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{4}$ ft. high W. of cor.

Note: on account of natural obstacles I am unable to set post in the ground. Land, rough mountainous with SE. and E. exposures.

Surface, for S. 6 cho. covered with large sandstone boulders; remainder of line almost barren surface rock, cut by numerous small box canyons.

Soil, barely sufficient disintegrated sandstone, in crevices of the rock to support a very scattering of undergrowth and scrub timber.

Timber, scattering growth of scrub cedar and pinon.

Undergrowth short shadscale and Brigham brush.

No agricultural or grazing land on mile

Subdivision of T. 23 S., R. 13 E.

chains

September 13, 1912

September 14: At 7^h. 56^m. a.m. l.m. t., I place my instrument over the cor. of secs. 9, 10, 15 and 16 and deflect from my solar line carried up from the south.

Thence I run N. 89° 59' E., on random line bet. secs. 10 and 15.

17.00 It is impossible to chain farther on account of precipitous slopes into canyon. Therefore, from this point I lay off a base, S. 0° 01' E., 15 chs. to making an angle of 90° with the line. From the south end of the base, a flag which I have set on the line to the east, bears N. 61° 06' E., making an angle with the base of 61° 07'. therefore $\tan 61^{\circ} 07' \times \text{base}$ or 1.81274×15.00 chs. makes 27.19 chs., which added to 17.00 chs. = 44.19 chs. to flag on crest of the San Rafael Reef.

114.33 Set temp. witness cor. to the 1/4 sec. cor.

80.11 Intersect N. and S. line 7 lks. N. of the cor. of secs. 10, 11, 14 and 15

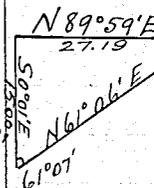
Thence, I run N. 89° 58' W., on true line bet. secs. 10 and 15.

Gradually ascend across open flat, through short undergrowth of shade-scale.

10.00 Foot of San Rafael Reef, bears N. 30° E., and S. 30° W.

Ascend very abruptly over E. face of reef, over numerous sharp crests of bare sandstone ledges tilted at an angle of about 60°.

36.76 Crest of San Rafael Reef, about 700



Subdivision of T. 23 S., R. 13 E.

chain

H. above sec. cor., bears $N. 30^{\circ} E.$, and
 $S. 30^{\circ} W.$

Point for $\frac{1}{4}$ sec. cor. will fall on
 inaccessible walls of canyon, \therefore
 therefore perpetuate this cor. as follows:
 Set an iron post, 3 ft. long, 1 in. in
 dia., 2 $\frac{1}{2}$ ins. in a mound of stone
 and earth, 4 ft. base, 2 ft. high for
 witness cor. to the $\frac{1}{4}$ sec. cor., with
 brass cap marked.

T 23 S., R 13 E
 $\frac{1}{4}$
 $\frac{1}{4}$ S 10
 S 15

1912

raise a mound of stone, 2 ft. base,
 $1\frac{1}{2}$ ft. high N. of cor.

Note: On account of natural obstacles,
 \therefore am unable to set post in the ground.
 September 14: At this cor. \therefore set off $30^{\circ} 21'$
 N., on the decl. arc; and at 11^h 56^m.
 a. m. l. m. t., observe the sun on the
 meridian; the resulting lat. is $38^{\circ} 19'$.
 Descend abruptly over west slope of
 reef.

110.05 $\frac{1}{2}$ True point for $\frac{1}{4}$ sec. cor.; impossible
 to set

113.00 Dry canyon, about 500 ft. below top
 of reef, course S. 6 cho., thence E.,
 breaking through the San Rafael Reef.
 Ascend abruptly over steep E. slope
 of mountain.

63.10 Point about 500 ft. above canyon.
 Descend abruptly along SW. slope of
 point
 Enter scattering cedar timber.

79.40 Dry canyon, 100 ft. below point,
 course SE.
 Ascend abruptly.

50.11 The cor. of secs. 9, 10, 15 and 16.

Subdivision of T. 23. S., R. 13 E.

chains.

Land, rough mountainous with steep slopes into canyon at 43. chs. and into valley at east foot of the San Rafael Reef. General E. exposure.

Surface, very rough and broken.

Soil, E. 10.00 chs. light, dry, sand loam of good texture, 10 to 30 ins. deep, on sandstone bed rock.

Soil of remaining part of mile is chiefly rocky and solid bed rock.

Timber scrub cedar and pinon.

Undergrowth, short shade-scale.

Good grass for grazing purposes on E. 10.00 chs.

Mountainous land 80.11 chs.

September 14, 1912

October 11, 1912: At 7^h. 50^m. a.m. l.m.t., I set off $38^{\circ}49\frac{1}{2}'$ on the lat. arc; $7^{\circ}02'$ S, on the decl. arc; and determine a meridian with the solar at the cor. of secs. 9, 10, 15 and 16.

Thence I run

$N. 0^{\circ}02' W.$, bet. secs. 9 and 10.

Over rough mountainous land covered with scattering cedar and pinon timber and undergrowth of short shade-scale and greasewood.

Descend.

1.30 Small dry canyon, course S. $65^{\circ} E.$

Ascend abruptly.

8.40 Rock spur, 75 ft. above canyon,

projects SE.

Descend abruptly over NE. slope.

11.60 Canyon, 100 ft. deep, course SE.

Ascend abruptly over SW. slope.

18.00 Rocky spur, 125 ft. high, projects SE.

Descend.

22.00 Small dry canyon, course SE.

Subdivision of T. 23 S., R. 13 E.

Chains							
	Ascend abruptly.						
31.00	Edge of mesa, 200 ft. above canyon, bears NW. and SE.						
	Thence across nearly level mesa.						
1/2 00	Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked						
	<table style="margin: auto;"> <tr> <td style="padding: 0 10px;">S 9</td> <td style="border-left: 1px solid black; border-right: 1px solid black; padding: 0 10px;">S 10</td> </tr> <tr> <td style="padding: 0 10px;">$\frac{1}{4}$</td> <td style="border-left: 1px solid black; border-right: 1px solid black; padding: 0 10px;"></td> </tr> <tr> <td style="padding: 0 10px;"></td> <td style="border-left: 1px solid black; border-right: 1px solid black; padding: 0 10px; text-align: center;">1912</td> </tr> </table>	S 9	S 10	$\frac{1}{4}$			1912
S 9	S 10						
$\frac{1}{4}$							
	1912						
	raise a mound of stone, 2 ft. base, $\frac{1}{4}$ ft. high W. of cor.						
40.10	Edge of mesa, bears N. 70° W., and S. 70° E.						
	Descend abruptly over N. slope.						
44.00	Canyon, 60 ft. deep, course SE.						
	Ascend abruptly.						
53.00	Rocky point, 125 ft. above canyon, projects SE.						
	Descend abruptly over NE. slope.						
58.00	Canyon, 130 ft. deep, course SE.						
	Ascend abruptly.						
65.00	Edge of mesa, about 200 ft. above canyon, bears N. 70° W., and S. 70° E.						
	Thence across nearly level mesa.						
71.50	Edge of mesa, bears N. 60° W., and S. 60° E.						
	Descend abruptly over NE. slope.						
80.00	Point for cor. of secs. 3, 4, 9 and 10 falls on face of ledge about 40 ft. high where it is impossible to set a cor.						
	I therefore perpetuate this cor. on solid grounds as follows:						
81.00	Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for witness cor. to secs. 3, 4, 9 and 10 with brass cap marked						

Subdivision of T. 23 S., R. 13 E.

Chains.

T 23 S	R 13 E
S 4	S 3
wc	
S 9	S 10
191v	

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

Land mountainous on heavy slopes to S.E. and E.

Surface, rough broken sandstone, with the exception of two small mesas or benches which are capped with limestone with a shallow covering of soil.

Soil on mesas, light, fine, dry, warm, rich loam, 4 to 8 ins. deep on limestone. Practically no soil on remainder of mile. Some grazing on mesas.

Timber, scrub cedar and pinon. Undergrowth, short shadeless and some greasewood.

Land mountainous or heavily timbered 80.00 chs.

The line bet. secs. 3 and 10 passes over a deep box canyon and the San Rafael Reef which is impossible to survey.

N. 0° 02' W., on random line bet. secs. 3 and 4, counting distances from true cor. point.

40.00

Set temporary 1/4 sec. cor.

80.00

Int. sect N. bdy. of the tp., 24 lks. N. 89° 59' E. of the cor. of secs. 3, 4, 33 and 34 heretofore described.

Subdivision of T. 23 S., R. 13 E.

Chains

- Thence I run
 $S. 0^{\circ} 12' E.$, on true line bet. secs. 3 and 4.
 Over mountainous land through scattering scrub cedar and pinon timber and undergrowth of short shadeless and Brigham brush.
 Ascend abruptly.
- 0.50 Edge of mesa, bears E. and W.
 Thence over nearly level mesa.
- 20.00 Edge of mesa, bears NW. and SE.
 Descend abruptly.
- 24.00 Dry canyon, 100 ft. below mesa, course SE.
 Ascend abruptly.
- 30.00 Point, about 100 ft. above canyon, projects SE.
 Descend abruptly.
- 35.00 Dry canyon, about 75 ft. deep, course SE.
 Ascend.
- 40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked
- | | |
|---------------|-----|
| S 4 | S 3 |
| $\frac{1}{4}$ | |
| 1917 | |
- raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.
 Note: On account of natural obstacles, I am unable to set post in the ground.
- 45.10 Rocky spur, about 100 ft. high, projects SE., descend abruptly.
- 54.00 Dry canyon, about 250 ft. deep, course SE.
 Ascend abruptly.
- 61.50 Rock spur, 100 ft. high, projects SE.
 Descend.

Subdivision of T. 23 S., R. 13 E.

Chamis.

75.00 Begin steep descent over S. slope of canyon wall.

76.50 Dry canyon, about 300 ft. deep, course SE.

Ascend abruptly.

79.00 The witness cor. to secs. 3, 4, 9 and 10.

80.00 The true cor. point of secs. 3, 4, 9 and 10. Land mountainous with steep slopes into canyons draining SE., with one nearly level mesa on N. $\frac{1}{4}$ mile.

Surface, broken sandstone points and narrow box canyons.

Soil, on mesa, light, dry loam, suited to cultivation if watered; remainder of mile where there is any soil, it is very shallow disintegrated sandstone.

Good grass for grazing on mesa. Timber, scrub cedar and pinon. Undergrowth, short shadscale and Brigham brush.

Land mountainous or heavily timbered 80.00 chs.

Robert E. Clark.
U. S. Transit man.

September 4; at 7^{h.} 59^{m.} a. m. l. m. t., set off $38^{\circ} 11'$ on the lat. arc; $7^{\circ} 12'$ N., on the decl. arc; and determine a meridian with the solar at the true cor. point of secs. 32 and 33 on the S. bdy. of the tp. heretofore described.

Thence I run.

N. $0^{\circ} 03'$ W., bet. secs. 32 and 33.

Over rough mountainous land.

Ascend abruptly over ledges and solid sandstone bed rock.

Subdivision of T. 23 S., R. 13 E.

Chains							
6.40	Sandstone ridge, 100 ft. high, bears E. and W. Descend abruptly over ledges.						
13.00	Hollow, 75 ft. deep, drains E. Ascend abruptly over ledges.						
20.00	Sandstone spur, about 100 ft. high, projects E. Descend abruptly over ledges 50 ft. to						
24.00	Hollow, drains E. Ascend 50 ft. to						
33.00	Sandstone ridge, bears NW. and SE. about 5 chs. Descend abruptly over NE. slope of ledges.						
40.00	125 ft. below top of ridge Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for 1/4 sec. cor., with brass cap marked						
<table style="margin: auto;"> <tr> <td style="border-right: 1px solid black; padding: 0 10px;">S 32</td> <td style="padding: 0 10px;">S 33</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 0 10px;">1/4</td> <td style="padding: 0 10px;">↓</td> </tr> <tr> <td colspan="2" style="padding: 0 10px;">1912</td> </tr> </table>		S 32	S 33	1/4	↓	1912	
S 32	S 33						
1/4	↓						
1912							
<p>raise a mound of stone, 2 ft. base, 1 1/4 ft. high W. of cor.</p>							
<p>Note: On account of natural obstacles I am unable to set post in the ground.</p>							
<p>Continue to descend.</p>							
46.00	Junction of 2 hollows, from the West and North, drains E.						
<p>Thence ascend in narrow hollow.</p>							
55.00	Head of hollow, ascend abruptly over ledges 75 ft. to						
61.90	Top of sandstone spur, projects NW. Descend abruptly over high ledges						
63.80	Bottom of canyon and wash, 20 lks. wide, 100 ft. below spur, drains E. 10 chs., thence S.						

Subdivision of T. 23 S., R. 13 E.

chains.

Large water pockets in canyon containing from 5 to 10,000 gallons of water.

68.00 Ascend abruptly over ledges, 50 ft. to sandstone spur, projects SE. Descend.

70.00 Short hollow, 50 ft. deep, drains SE. Ascend over solid bed rock.

79.00 Sandstone spur, 70 ft. high, projects S. 20° E.

Descend abruptly over ledge, 25 ft. high.

80.00 At base of ledge.

Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 28, 29, 32 and 33, with brass cap marked

T 23 S	R 13 E	✓
S 29	S 28	
S 32	S 33	
1912		

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

Land rough mountainous in Breaks of the San Rafael Reef and with a general east exposure

Soil, solid sandstone bed rock and some shallow disintegrated sandstone which supports a scant growth of greasewood undergrowth.

No timber.

Undergrowth some scattering greasewood.

Land mountainous and difficult to survey 80.00 chs.

Subdivision of T. 23 S., R. 13 E1

Chamo

September 4: At this sec. cor., I set off $7^{\circ}08' N.$, on the decl. arc; and at $11^h.59^m$ a.m. l.m.t., observe the sun on the meridian; the resulting lat. is $38^{\circ}47'$

East, on random line, bet. secs. 28 and 33.

40.00 Set temporary $\frac{1}{4}$ sec. cor.

80.12 Intersect N. and S. line $12\frac{1}{2}$ lks. S. of the cor. of secs. 27, 28, 33 and 34

Thence I run

S. $89^{\circ}55' W.$, on true line bet. secs. 28 and 33.

Over mountainous land draining E., through short undergrowth of shade. Gradually ascend.

7.00 Top of east side of canyon, bears N.E. and S.W.

Descend abruptly over ledges
9.00 Bottom of canyon, 75 ft. deep, drains N.E.

Ascend abruptly over ledges.
15.00 Top of west side of canyon, 90 ft. above bottom, bears N.E. and S.W.

Thence along top of north side of canyon, gradually ascending.

32.00 Enter solid sandstone bed rock, bears N.W. and S.E.

40.06 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked

S 28 ✓
1/4

S 33

1912

raise a mound of stone, 2 ft. base

Subdivision of T. 23 S., R. 13 E.

chains.

1 1/2 ft. high N. of cor.

Note: on account of natural obstacles, I am unable to set post in the ground.

44.00

Rocky ridge, bears N. and S.
Begin descent over the rough rocky breaks of the San Rafael Reef.

60.00

Hollow, 75 ft. deep, drains S.E.
Gradually ascend over broken land of solid sandstone.

74.00

Top of ridge, 75 ft. high, bears N. and S.
Ascend abruptly over perpendicular sandstone ledge 150 ft. high into canyon.

77.00

Bottom of deep canyon, drains S. 10° E.

80.12

Ascend abruptly over ledges 60 ft. to the cor. of secs. 28, 29, 32 and 33.
Land, rough mountainous, with a general east exposure.
Soil, rough, broken sandstone bed-rock, with the exception of the east 32.00 chs. which is covered with a shallow coat of light clay and gravel soil, 6 to 10 ins. deep, on sandstone bed rock sub-soil.
No timber.

Undergrowth, short shade-scale
Some grass for grazing on E. 32.00 chs.
Mountainous land. 80.12 chs.

September 4, 1912

September 7: At 6^{h.} 58^{m.} a.m. l.m.t., I set off 38° 47' on the lat. arc; 6° 07' N., on the decl. arc; and determine a meridian with the solar at the cor. of secs. 28, 29, 32 and 33

Thence I run
N. 0° 03' W., on true line bet. secs. 28
and 29.

Over rough mountainous land
across solid sandstone bed rock.
Some scattering shade-scale under-
growth.

Descend into canyon over ledges.
11.00 Bottom of narrow canyon, 50 ft.
below sec. cor., drains SE.

Thence ascend steep south slope
of solid bed rock.

37.80 Top of Pinnacle on ridge, about
1150 ft. above canyon, bears E. and
W.

Descend gradually.

39.00 Top of perpendicular sandstone
ledge, 100 ft. high, bears NE. and SW.
Descend abruptly.

40.00 125 ft. below top of ledge.
Set an iron post, 3 ft. long, 1 in. in
dia., 24 ins. in a mound of stone
and earth, 4 ft. base, 2 ft. high for
1/4 sec. cor., with brass cap marked

S 29 | S 28
1/4

1917

raise a mound of stone, 2 ft. base,
1 1/2 ft. high W. of cor.

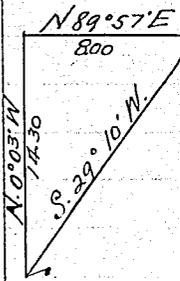
Note: On account of natural obstacles
I am unable to set post in the
ground.

Thence across nearly level bench.
46.75 Top of perpendicular sandstone
ledge, 100 ft. high and summit of
the Breaks of the San Rafael Reef,
bears N. 80° W. and E. Precipitous
descent of about 1500 ft., down

Subdivision of T. 23 S., R. 13 E.

Chauss

which I cannot chain. To determine distance to base of steep descent, I set a flag on line north, and also erect a signal at this point. From my north flag I measure a base line $N. 89^{\circ} 57' E.$ 8.00 chs. to a point from which the signal on top of ledges bears $S. 29^{\circ} 10' W.$ By the mean of 3 readings I find that the base subtends an angle of $60^{\circ} 47'$ to the flag, therefore $\tan. 60^{\circ} 47' \times \text{base}$ or $1.788 \times 8' = 14.30$ chs., which added to 46.75 chs. makes



61.05 To base of steep descent.
Gradually descend.

62.00 Bottom of straight canyon and wash, 1 ch. wide, drains E. Thence gradually ascend over broken rocky land sloping S., through short undergrowth of shade scale and rabbit brush.

80.00 About 100 ft. above canyon. Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 20, 21, 28 and 29, with brass cap marked.

T 23 S	R 13 E ✓
S 20	S 21
S 29	S 28
1912	

raise a mound of stone, 2 ft. base, $1\frac{1}{4}$ ft. high W. of cor.

Land, rough mountainous with a general S. exposure on S. 37.80 chs. and N. 18 chs., and steep N. slope into canyon between 37.80 chs. and 62.00 chs.

Surface on S. 62 chs. rough broken sandstone bed rock. with enough

Chaus.

disintegrated sandstone soil in crevices of rocks to support a scant growth of shade-scale. N. 18 cho. rocky surface of sandstone formation on fine, dry clay and shale rock sub-soil.

No timber.

Undergrowth, short shade-scale.

Mount ainous land 80.00 cho.

September 7: At this sec. cor., I set off $6^{\circ} 01' N.$, on the decl. arc; and at 11th. 58^m. a. m. l. m. t., observe the sun on the meridian; the resulting lat. is $38^{\circ} 48'$

N. $89^{\circ} 55' E.$, on random line bet. secs. 21 and 28.

On account of high ledges and precipitous west slopes of the breaks of the San Rafael Reef, I am compelled to triangulate to the top, as follows.

Set a flag on ^{line on} top of breaks, then measure a base line $S. 0^{\circ} 05' E.$, 18.00 cho. to a point from which flag on top bears $N. 40^{\circ} 45' E.$, from the flag the S. end of the base bears $S. 49^{\circ} 45' W.$, therefore $\tan 49^{\circ} 50' \times$ base or 1.18476×18 cho. =

21.33
40.00
80.16

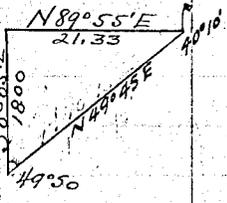
to top of crest of San Rafael Reef.

Set temporary $\frac{1}{4}$ sec. cor.,

Intersect N. and S. line 12 lks. N. of the cor. of secs. 21, 22, 27 and 28. Thence I run West, on true line bet. secs. 21 and 28.

Over mount ainous land sloping E., through short undergrowth of shade-scale.

Ascend.



Subdivision of T. 23 S., R. 13 E.

chains.

8.50 Base of east slope of the Breaks of the San Rafael reef, bears N. and S.

Begin steep ascent over small sandstone ledges and solid sandstone bed rock tilted up at an angle of about 35°.

40.08 750 ft. above sec. cor.

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked.

S 21 ✓
 $\frac{1}{4}$

S 28

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.

Note: On account of natural obstacles I am unable to set post in the ground.

Continue steep ascent.

48.00 Top of steep ascent, 250 ft. above $\frac{1}{4}$ sec. cor., bears N. and S.

Gradually ascend

58.83 Top of crest of San Rafael Reef, bears N. 20° W., and SE.

Descend abruptly over ledges and boulders on West face of reef, 900 ft. to

80.16 The cor. of secs. 20, 21, 28 and 29. Land rough mountainous with an easterly exposure on E. 58.83 chs. and west exposure on W. 21.33 chs. Surface, rough broken sandstone bedrock and boulders. Some disintegrated sandstone soil in crevices of rocks which supports

a scant growth of shadscale.

No timber.

Undergrowth, some short shadscale.
Land mountainous and exceptionally difficult to survey 80.16 chs.

September 7, 1912

September 12; at 7^{h.} 56^{m.} a.m. l.m. t.,
I set off $38^{\circ}48'$ on the lat. arc; $4^{\circ}12'N.$
on the decl. arc; and determine
a meridian with the solar at the
cor. of secs. 20, 21, 28 and 29.

Thence I run

$N. 0^{\circ}03' W.$, bet. secs. 20 and 21.

Over rough mountainous land
draining S. into Straight Canyon.
Undergrowth, some short shadscale.
Ascend 30 ft. to

3.00 Low spur, projects W.

Descend abruptly over N. slope
into canyon.

10.00 Bottom of canyon and wash, 25
lks. wide, 90 ft. below spur, drains
SW.

Thence over broken land on west
side of large box canyon, gradually
ascending over series of short flat
sandstone spurs and deep box
gulches.

37.85 Top of S. side of box canyon, bears
NW. and SE. The point for the $1/4$
sec. cor. will fall on ledge in
canyon, where cor. cannot be set,
I therefore perpetuate cor. at this
point as follows:

Set an iron post, 3 ft. long, 1 in. in
dia., 24 in. in a mound of stone
and earth, 4 ft. base, 2 ft. high
for witness cor. to the $1/4$ sec. cor.,

Subdivision of T. 23 S., R. 13 E.

chain

with brass cap marked.

T 23 S. R 13 E

W 1/4

S 20 | S 21

1917

raise a mound of stone, 2 ft. base,
1 1/2 ft. high W. of cor.

Note: On account of natural obstacles,
I am unable to set post in the
ground.

Descend abruptly over ledges into
canyon.

40.00 Point for 1/4 sec. cor. falls on ledge.
True cor. point cannot be reached.

41.50 Bottom of box canyon and wash,
25 lbs. wide, 150 ft. deep, drains SE.
Ascend abruptly over ledges from
canyon

45.00 Top of north side of box canyon, 180
ft. above bottom, bears NW. and SE.
Thence ascend over S. face of high
mountain, over ledges and huge
boulders.

64.50 Top of high rock spur, 1100 ft. above
Straight Canyon, projects SE.
Enter scattering scrub cedar and
pinon timber

68.00 Descend 75 ft. over ledges to
Hollow, drains SE. Large water
pockets in hollow.

73.00 Ascend abruptly 100 ft. over ledges to
Top of north side of hollow, bears
SE. and W.

Thence gradually ascend over very
rocky ground.

80.00 Set an iron post, 3 ft. long, 2 ins.
in dia., 24 ins. in a mound of
stone and earth, 4 ft. base, 2 ft.

chains

high for cor. of secs. 16, 17, 20 and 21
with brass cap marked

T 23 S	R 13 E
S 17	S 16
S 20	S 21

1912

raise a mound of stone, 2 ft. base,
1 1/2 ft. high W. of cor.

Note: On account of natural obstacles
I am unable to set post in the
ground.

Land, rough mountainous with
a general S. exposure and steep N.
and S. slopes of canyons.

Surface, rough broken sandstone
bed rock and boulders. Soil, shallow
disintegrated sandstone, enough to
support a scrub growth of pinon
and cedar pinon timber and some
shadscale undergrowth.

Timber, scrub-cedar and pinon.

Undergrowth, short shadscale.

Land mountainous or heavily
timbered 80.00 chs.

September 12: At this sec. cor., I set
off $4^{\circ} 07' N.$, on the decl. arc; and
at $11^h. 56^m$ a.m. l.m.t., observe the
sun on the meridian; the result-
ing lat. is $38^{\circ} 49'$

East, on random line, bet. secs. 16
and 21

40.00 Set temporary 1/4 sec. cor.,

80.20 Intersect N. and S. line 14 lks. S.
of the cor. of secs. 15, 16, 20 and 22.

Thence; I run

S. $89^{\circ} 54' W.$, on true line bet. secs. 16
and 21.

Over mountainous land in bottom

Subdivision of T. 23 S., R. 13 E.

chains

of canyon. Undergrowth some short shade-scale.

Gradually ascend.

5.00 Leave canyon bottom, begin very steep ascent of SE. face of mountain, over solid surface rock, ledges and huge boulders, bears N. 10° E. and SW.

Enter scattering scrub cedar and piñon timber.

33.00 Rocky spur, 1000 ft. above sec. cor. projects SE.

Thence over nearly S. face of mountain.

40.10 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for 1/4 sec. cor., with brass cap marked

S 16 ✓
1/4

S 21

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high N. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

42.00 Begin abrupt descent over land facing W.

54.00 Bottom of hollow, 75 ft. below spur, drains SE.

58.00 Ascend abruptly 80 ft. to top of west side of hollow, ascend gradually to

65.80 Spur, projects SE.

Descend abruptly

72.50 Hollow, 100 ft. deep, drains SE.

Ascend 100 ft. to

77.50 Spur, projects SE.

80.20 Descend gradually
 The cor. of secs. 16, 17, 20 and 21
 Land, rough mountainous S. and
 SE. faces of mountain.
 Surface, rough broken, sandstone
 and limestone bed rock covered
 with huge boulders.
 Soil, shallow disintegrated sandstone,
 in the crevices of the rocks to support
 a scant growth of shadscale
 undergrowth and scrub timber.
 Timber, scattering scrub cedar and
 pinon.
 Undergrowth, short shadscale.
 Land, mountainous or heavily
 timbered 80.20 chs.

September 12, 1912

Howard W. Miller.

U. S. Surveyor.

October 10, 1912: For solar observation
 see line bet. secs. 17 and 20.
 At the cor. of secs. 16, 17, 20 and 21
 I set off $6^{\circ} 42' S.$, on the decl. arc,
 and at $11^h 47^m$ a. m. l. m. t.,
 observe the sun on the meridian;
 the resulting lat. is $38^{\circ} 49'$.

Hence I run

$71.0^{\circ} 03' W.$, bet. secs. 16 and 17.
 Over rough mountainous land
 through scattering scrub cedar
 and pinon timber and undergrowth
 of short shadscale and Brigham
 Bush.

5.30 Ascend abruptly 50 ft. to

Spur, projects SE.

Descend abruptly.

5.50 Hollow, 80 ft. deep, drains SE.

Ascend abruptly.

Subdivision of T. 23 S., R. 13 E.

chains

- 10.60 Spur, 70 ft. above hollow, projects SE.
Ascend gradually over south slope.
Enter dense timber, bears E. and W.
- 40.00 Set an iron post, 3 ft. long, 1 in. in dia., only 7.0 ins. in the ground, (on account of underlying rock) and supported by a mound of stone, 4 ft. base, 16 ins. high, for 1/2 sec. cor., with brass cap marked

S 17	S 16
1/4	

1912

raise a mound of stone, 2 ft. base, 1 1/4 ft. high W. of cor.

- 52.00 Begin steep descent over NE. slope.
- 56.00 Canyon, 100 ft. deep, drains SE.
Ascend abruptly over SW. slope
- 62.00 Rock point, about 80 ft. high, falls SE.
Gradually descend over broken E. and NE. slopes.
- 80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 8, 9, 16 and 17, with brass cap marked

T 23 S	R 13 E
S 8	S 9
S 17	S 16

1912

raise a mound of stone, 2 ft. base, 1 1/4 ft. high W. of cor.

Note: on account of natural obstacles I am unable to set post in the ground.

band mountainous on steep slopes into canyons draining SE. at the N. and S. ends of the line; in the center of the line, gentle S. slope

chauss.

Surface, at both ends of line, rough broken sandstone points and box canyons; center of line, smooth, gentle slope, covered with numerous sandstone boulders and outcroppings. Soil, on gentle S. slope, light, dry, sandy loam, 6 to 24 ins. deep, on sandstone bed rock; suited to cultivation if watered and affording considerable grazing. Soil on remainder of mile, scarce disintegrated sandstone of no value.

Timber, scrub cedar and pinon. Undergrowth, shadscale and Brigham brush.

Land, mountainous and heavily timbered 80.00 chs.

October 10, 1912

October 11: For solar observation see line bet. secs. 9 and 10.

At the cor. of secs. 8, 9, 16 and 17, I set off $7^{\circ} 06' S.$, on the decl. arc; and at $11^h. 47^m.$ a.m. l.m.t., observe the sun on the meridian; the resulting lat. is $38^{\circ} 49\frac{1}{2}'$.

Thence I run.

N. $89^{\circ} 54' E.$, on random line bet. secs. 9 and 16.

40.00 Set temporary $\frac{1}{4}$ sec. cor. \checkmark

80.10 Intersect N. and S. line 9 lks. N. of the cor. of secs. 9, 10, 15 and 16.

Thence I run

S. $89^{\circ} 58' W.$, on true line bet. secs. 9 and 16.

Over mountainous land, through scattering scrub cedar and pinon timber, and undergrowth of short shadscale.

Subdivision of T. 23 S., R. 13 E.

chains.

Gradually ascend over NE. slope of rock point.

19.10 Rock point, 80 ft. above sec. cor., projects SE.

Descend gradual SW. slope.

40.05 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for 1/4 sec. cor., with brass cap marked.

S 9 ✓

1/4

S 16

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high N. of cor.

Note: On account of natural obstacles I am unable to set post in the ground.

48.50 Dry canyon, 100 ft. below point, drains SE.

Ascend abruptly over NE. slope.

65.00 Rock point, 80 ft. high, projects SE. Descend abruptly.

78.00 Dry canyon, 75 ft. deep, drains SE. Ascend.

80.10 The cor. of secs. 8, 9, 16 and 17.

Land mountainous on rather steep slopes into canyons draining SE. Surface, rough sandstone points and slopes.

Soil, very shallow, disintegrated sandstone of poor quality in the canyon bottoms and in crevices of the rocks.

Timber, cedar and pinon.

Undergrowth, scattering shadscale.

Mountainous or timbered lands

80.10 chs.

October 11, 1912

October 12, 1912: For solar observation see line bet. secs. 17 and 18. N. $0^{\circ} 03' W.$, bet. secs. 8 and 9.

Over rough mountainous land through heavy scrub cedar and pinon timber.

Descend abruptly.

2.00 Dry canyon, course SE.

Ascend abruptly.

6.50 Rock point, 75 ft. high, projects SE. Gradually ascend.

32.35 W. slope of knoll, 125 ft. high.

Gradually descend over N. slope.

Leave heavy timber, enter scattering timber and undergrowth of short shadescale and salt sage.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor.; with brass cap marked

S 8 | S 9 ✓
 $\frac{1}{4}$

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.

55.00 Edge of canyon, bears NE. and W. Descend abruptly

57.00 Dry canyon, about 100 ft. below edge, drains NE.

Ascend abruptly.

67.00 Edge of mesa, 100 ft. above canyon, bears E. and W.

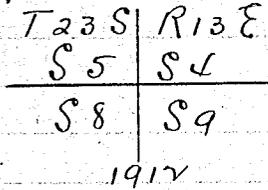
Hence across nearly level mesa, through heavy scrub cedar and pinon timber.

76.30 Edge of mesa, bears E. and W. Descend abruptly

Subdivision of T. 23 S., R. 13 E.

chauss.

80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 4, 5, 8 and 9, with brass cap marked ✓



raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles I am unable to set post in the ground.

Land, mountainous on gentle S. slopes on S. 1/2 mile and gentle N. slopes on N. 1/2 mile, except where cut through by deep box canyons with precipitous sandstone walls. Surface, covered with sandstone boulders and outcroppings.

Soil, light, fine, dry, warm, sandy loam of good texture 6 to 18 ins. deep, on clay sub-soil.

Timber, scrub cedar and pinon. Undergrowth, short shadscale and salt sage.

Good grass for grazing purposes. Land mountainous or heavily timbered 80.00 chs.

October 12, 1912

The line bet. secs. 4 and 9, follows along the precipitous walls of a box canyon, crossing and recrossing the canyon and is impossible to survey

October 14: For solar observation

Chamo

see line bet. secs. 7 and 8.

At the cor. of secs. 4, 5, 8 and 9, I deflect from a solar line previously carried over from the west, and run $N. 0^{\circ} 03' W.$, on random line bet. secs. 4 and 5

40.00 Set temporary $\frac{1}{4}$ sec. cor.

79.95 Intersect N. bdy. of the tp. 5 lks. $N. 89^{\circ} 59' E.$, of the cor. of secs. 4, 5, 32 and 33 heretofore described.

Thence I run

$S. 0^{\circ} 05' E.$, on true line, bet. secs. 4 and 5.

Ascend abruptly over mountainous land, covered with scattering undergrowth of shadscale, and heavy scrub cedar and pinon timber.

2.40 Edge of mesa, bears E. and W.

Thence across level mesa.

7.30 Edge of mesa, bears NW. and SE.

Descend.

13.60 Dry canyon, 75 ft. deep, drains SE.

Ascend abruptly.

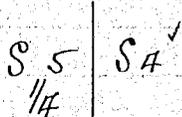
16.20 Edge of mesa, about 100 ft. above,

canyon, bears NW. and SE.

Thence across level mesa.

39.95 Set an iron post, 3 ft. long, 1 in.

in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked



1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.

45.00 Edge of mesa, bears NW. and SE.

Descend abruptly over sandstone breaks.

62.00 Dry canyon, 125 ft. below mesa, drains SE.

Subdivision of T. 23 S., R. 13 E.

Chauis

67.00 Ascend abruptly over S. wall of canyon.
Edge of mesa, bears NW. and SE.
Thence across rolling mesa.

73.10 Edge of mesa, bears E. and W.
Leave timber, descend abruptly over
N. wall of canyon, over sandstone
ledges and breaks.

79.25 Bottom of canyon, 200 ft. below mesa,
drains E.

Ascend.

79.95 The cor. of secs. 4, 5, 8 and 9.
Land, rolling mesas, cut by very
rough, narrow box canyons, eroded
from the solid rock. General E. and
SE. exposures.

Surface of mesas covered with
limestone boulders.

The canyon walls are broken barren
sandstone ledges with a limestone
ledge about 10 ft. in thickness
capping the mesas.

Soil, on mesas is a fine, light, dry,
warm sandy loam of good texture,
6 to 30 ins. deep, on limestone
bedrock.

Timber, cedar and pinon.

Undergrowth, short shade-scale
good grass for grazing on mesas.

Land mountainous or heavily
timbered 79.95 chs.

October 14, 1912

Robert E. C. East
U. S. Transit man.

It being impossible to run the
line bet. secs. 30 and 31 on account
of deep impassible box canyons
which cross the line at right angles
and also of steep slopes of solid

chauss

sandstone bed rock ridges which I am unable to climb, I proceed as follows:

September 5; at 7^h. 59^m. a. m. l. m. f., I set off $38^{\circ} 47'$ on the lat. arc; $6^{\circ} 50'$ N., on the decl. arc; and determine a meridian with the solar at the cor. of secs. 28, 29, 32 and 33.

Thence I run West, on true line bet. secs. 29 and 32.

Over rough mountainous land in breaks of the San Rafael Reef, across solid sandstone bed rock.

- Ascend abruptly over ledge 25 ft. high.
- 0.75 Sandstone spur, projects S. 20° E.
Descend 50 ft. to
- 2.50 Rocky hollow, drains S. 20° E.
Ascend abruptly over sandstone ledges.
- 7.50 High sandstone spur, 150 ft. above hollow, projects S.
Descend abruptly over ledges.
- 10.00 Rocky hollow, 100 ft. deep, drains S.
Thence ascend over rough east slope over ledges and smooth bed rock.
- 24.75 Sandstone ridge, 450 ft. above hollow, bears N. 25° W. and S.
Descend
- 27.00 Top of perpendicular sandstone ledge, 125 ft. high, bears NW. and SE.
Descend abruptly into canyon.
- 31.50 Bottom of canyon, 260 ft. deep, drains SE.
Ascend abruptly over NE. slope over huge boulders.
- 38.00 Base of perpendicular sandstone ledge, 100 ft. high, bears N. 70° W., and S. 70° E.
Ascend.

Subdivision of T. 23 S., R. 13 E.

Chaus.

110.00

on top ledge.
Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high, for $\frac{1}{4}$ sec. cor., with brass cap marked.

S 29 $\frac{1}{4}$ ✓

S 32

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

September 5: At this $\frac{1}{4}$ sec. cor., I set off $6^{\circ}45'$ N., on the decl. arc; and at $11^{\text{h}}.59^{\text{m}}$ a. m. l. m. t., observe the sun on the meridian; the resulting lat. is $38^{\circ}47'$

Ascend abruptly.

147.00

Top of high rock point, 350 ft. above canyon, bears NW. 4 chs. and S.E.

Descend abruptly over ledges 150 ft. to

54.00

Hollow, drains SE.

Enter scattering scrub cedar and pinion timber, bears E. and W.

Ascend.

72.00

Rocky ridge, 125 ft. above hollow, bears NW. and SE.

Leave timber.

Descend over huge boulders.

75.00

Hollow, 75 ft. deep, drains SE.

Ascend 50 ft. to

80.00

Set an iron post, 3 ft. long, 2 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 29, 30, 31 and 32, with brass cap marked.

T 23 S	R 13 E
S 30	S 29
S 31	S 32

1912

raise a mound of stone, 2 ft. base,
1 1/2 ft. high W. of cor.

Note: On account of natural obstacles,
I am unable to set post in the
ground.

Land, rough mountainous with
steep slopes into canyons draining
S.E. General expose of country is to
the east.

Surface, rough, broken sandstone
bed rock and ledges, covered with
huge boulders.

Soil, some very shallow disintegrated
sandstone which supports in some
places a scrub growth of cedar
and pinon timber.

Timber, some scattering cedar and
pinon.

No Undergrowth.

Mountainous land. 80.00 chs.

West, 1.49 chs., and N. 35 lbs. is the
summit of the San Rafael reef.

I set flags at these points for future
reference.

September 5, 1912

Howard W. Miller

U. S. Surveyor.

September 16: For solar observation
see line bet. secs. 31 and 32, W. bdy.
T. 23 S., R. 13 E., book "E" of this survey.
It being impossible to run west from
the cor. of secs. 29, 30, 31 and 32,
on account of the high ledges and
breaks of the San Rafael Reef. I

Subdivision of T. 23 S., R. 13 E.

Chambers

proceed as follows:

From the cor. of secs. 25, 30, 31 and 36 on the W. bdy. of the tp. heretofore described, a flag already set by Howard W. Miller, 0.35 chs. North of the cor. of secs. 29, 30, 31 and 32 bears N. 89° 45' E. I now lay off a base, North, 28.52 chs., making an angle with the flag of 89° 45'.

From the N. end of the base the flag bears S. 71° 20' E., making an angle with the base of 71° 20' and the angle at the flag 18° 55'.

$$\text{Log } 28.52 \text{ chs.} = 1.455150$$

$$\text{Log sin. } 71^\circ 20' = \underline{4.976532}$$

$$1.431682$$

$$\text{Log sin } 18^\circ 55' = \underline{9.510803}$$

$$\text{log } 83.34 = 1.920879$$

Therefore my random line running West from the cor. of secs. 29, 30, 31 and 32 is,

83.34 Intersect W. bdy. of the tp. at the cor. of secs. 25, 30, 31 and 36, heretofore described. Thence I run East, on true line bet. secs. 30 and 31.

Descending gradually over mountainous land, covered with scattering undergrowth of shadscale and salt sage, along SE. slope.

8.80 Bend in gulch from SW. to SE. Thence over land facing almost S.

34.50 Small dry gulch, about 200 ft. below sec. cor., course SE.

Gradually ascend.

37.00 Low adobe spur, projects SE.

Descend over NE. slope.

40.00 Point for 1/4 sec. cor. will fall on very steep adobe hillside, where it

N 89° 45' E
83.34
S 71° 20' E
83.34

chauss

would be liable to destruction from slide. I therefore perpetuate this cor. at this point as follows:

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for witness cor. to the $\frac{1}{4}$ sec. cor., with brass cap marked ✓

T 23 S R 13 E

S 30 W $\frac{1}{4}$.

S 31

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.

Descend very abruptly over NE. slope of hill.

43.34 True point for $\frac{1}{4}$ sec. cor. on steep hillside, not set.

50.00 South branch of Straight Canyon wash, about 500 ft. below witness $\frac{1}{4}$ sec. cor., course NE.

Ascend precipitous NW. slope over ledges of San Rafael Reef.

81.85 Top of Reef and flag set by Howard W. Miller.

83.34 The cor. of secs. 29, 30, 31 and 32.

Land rough mountainous with steep slopes into Straight wash on E. $\frac{1}{2}$ mile, and fairly smooth SE. slopes on W. $\frac{1}{2}$ mile.

Surface E. of Straight wash, solid sandstone outcroppings and ledges.

W. of Straight wash, adobe hills covered with sandstone boulders.

Soil, W. of Straight wash, disintegrated shales and sandstone, of great depth. E. of wash, practically bare sandstone.

No timber.

Undergrowth, short shadescale and

Subdivision of T. 23 S., R. 13 E.

chains.

salt sage.

Mount kinoup land 83.34 chs.

September 16, 1912.

September 18: At 8^h. 56^m. a.m. l.m.t.,
I set off $38^{\circ} 47'$ on the lat. arc; $1^{\circ} 52'$
N., on the decl. arc; and determine
a meridian with the solar at a
station about 40.00 chs. $N. 0^{\circ} 03' W.$
of the cor. of secs. 29, 30, 31 and 32.

It being impossible to chain the $S\frac{1}{2}$
of the line bet. secs. 29 and 30 on
account of high ledges and the
precipitous NW. slope of the San
Rafael Reef, I triangulate as follows.
A flag already set by Howard W. Miller,
35 chs. $N. 0^{\circ} 03' W.$ of the cor. of secs.
29, 30, 31 and 32 bears $S. 0^{\circ} 03' E.$

I now measure a base line $S. 89^{\circ} 57'$
 $W.$, 30.00 chs. dist., to a point from
which the flag bears $S. 38^{\circ} 50' E.$
The base line subtends an angle of
 $51^{\circ} 13'$ to the flag, therefore $\tan. 51^{\circ}$
 $13' \times \text{base or } 1.24449 \times 30.00 \text{ chs.},$
makes. $37.33 \text{ chs.} + .35 \text{ chs.} = 37.68 \text{ chs.}$
to point of triangulation.

The topography as it appears on true
line running N. is as follows:

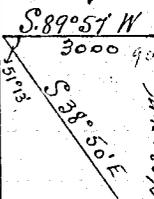
$N. 0^{\circ} 03' W.$, bet. secs. 29 and 30.

0.35 Flag, set by Howard W. Miller for
purpose of triangulation

Descend precipitous NW. slope of San
Rafael Reef; over enormous sandstone
cliffs.

20.00 Straight wash, 600 ft. below sec. cor.
course N.E.

Ascend SE. slope, over solid surface
rock, covered with scattering shadescale
undergrowth and scrub cedar and



- 37.68 Pinon timber
Point of triangulation.
- 40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked.

S 30	S 29
$\frac{1}{4}$	

1912

- raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.
- Note: On account of natural obstacles I am unable to set post in the ground.
- 47.80 Rock spur, 200 ft. above straight wash, projects SE.
Descend.
- 54.00 Small, dry canyon, course SE.
Ascend.
- 59.00 Rock spur, projects SE.
Descend.
- 63.00 Small, dry rock canyon, course SE.
Ascend.
- 69.00 Rock spur, projects SE.
Descend.
- 72.00 Small, dry rock canyon, course SE.
Ascend abruptly.
- 76.40 Rock spur, 80 ft. above canyon, projects SE.
Descend abruptly over W. wall of canyon.
- 80.00 Point for sec. cor. falls on W. wall of canyon, where it is impossible to set a cor. I therefore perpetuate this cor. as follows: at a point 40 lks. W. of the true cor. point.
Set an iron post, 3 ft. long, 2 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for

Subdivision of T. 23 S., R. 13 E.

chains

witness cor. to secs. 19, 20, 29 and 30. with brass cap marked.

T 23 S	R 13 E
S 19 WC	S 20
S 30	S 29
1912	

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground. Land, mountainous with steep slopes into Straight wash on S. $\frac{1}{4}$ mile and more gradual slopes to same wash on N. $\frac{3}{4}$ mile.

Surface, rough, broken surface rock and huge sandstone cliffs.

Practically no soil.

Timber, some scrub cedar and pinon.

Undergrowth, short shadscale.

Mountainous land 80.00 chs.

Note: The sky is overcast at noon observations for lat. are impossible

September 19; At 8^h. 20^m. a.m. l.m.t. I set off $38^{\circ} 48'$ on the lat. arc: $129'$ N., on the decl. arc; and determine a meridian with the solar at the witness cor. to secs. 19, 20, 29 and 30.

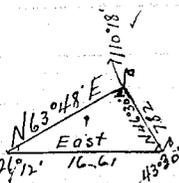
Thence I run

East, on random line, bet. secs. 20 and 29.

It is impossible to chain across the canyon which lies just east of this cor., I therefore proceed as follows:

I set a flag on line on east rim of canyon, then set flag No. 2, N.W. of the first one, which bears N. $63^{\circ} 48' E.$ making an angle of $26^{\circ} 12'$ with the

chains



line. I now go to flag no. 1, and measure my base line $N. 46^{\circ} 30' W.$ 7.82 chs., to flag No. 2. making an angle with the line of $43^{\circ} 30'$. The third angle by repetition reads $110^{\circ} 18'$. The sum of these angles is 180° , I now compute the distance across canyon as follows:

$$\log 7.82 \text{ chs.} = 0.893707^{\vee}$$

$$\log \sin 110^{\circ} 18' = 9.972151^{\vee}$$

$$0.865858$$

$$\log \sin 26^{\circ} 12' = 9.644936^{\vee}$$

$$\log 16.61 = 1.220422$$

$16.61 \text{ chs.} - 40 \text{ lks.} = 16.21 \text{ chs.}$ distance of flag from true cor. point of secs. 19, 20, 29 and 30.

40.00 Set temporary $\frac{1}{4}$ sec. cor.

80.24 Intersect N. and S. line $1\frac{1}{4}$ lks. S. of the cor. of secs. 20, 21, 28 and 29. Thence I run $S. 89^{\circ} 54' W.$, on true line bet. secs. 20 and 29.

Over mountainous land, through short undergrowth of shade-scale. Descend towards Straight canyon.

11.00 Wash in Straight canyon, 90 ft. below sec. cor., course SE. Ascend abruptly over NE. slope.

19.00 Spur, about 400 ft. high, projects N. Descend abruptly over sandstone ledges. Enter scattering scrub cedar and piñon timber.

26.00 Wash in Straight canyon, 350 ft. deep, course NE.

Ascend abruptly over SE. slope across solid surface rock.

33.00 Rock point, about 500 ft. above Straight canyon, projects SE. Descend very abruptly.

Subdivision of T. 23 S., R. 13 E.

chains

35.00 Rock canyon, 100 ft. deep, course SE. Ascend abruptly SE. slope, over numerous sandstone points and canyons, draining SE.

40.12 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked.

S 20 ✓

$\frac{1}{4}$

S 29

1912.

raise a mound of stone, 2 ft. base, $\frac{1}{2}$ ft. high N. of cor.

Note: On account of natural obstacles I am unable to set post in the ground.

64.10 Rim of canyon, bears NW. and SE. Descend abruptly over precipitous wall of canyon.

71.00 North branch of Straight canyon, course SE. about 700 ft. deep.

Ascend precipitous W. wall of canyon.

80.24 The true cor. point of secs. 19, 20, 29 and 30.

Land mountainous on steep slopes into Straight wash.

Surface, rough and broken sandstone, cut by numerous canyons.

Soil, in E. $\frac{1}{4}$ mile, disintegrated shales on clay sub-soil of considerable depth. Practically no soil in remainder of mile.

Timber, scrub cedar and pinon Undergrowth, some short shade-scale.

Mountainous land 80.24 chs.

September 19, 1912

September 18: Commencing at the

true cor. point of secs. 19, 20, 29 and 30, and deflecting from the solar line carried up from the S. this a. m., I run

West, on random line, bet. secs. 19 and 30.

110.00 Set temporary $\frac{1}{4}$ sec. cor.

83.02 Intersect W. bdy. of the tp. 14 lks. N. of the cor. of secs. 19, 24, 25 and 30 heretofore described.

Thence I run

$N. 89^{\circ} 54' E.$, on true line bet. secs. 19 and 30.

Over mountainous land draining S.E., across nearly bare surface rock covered with scattering scrub cedar and pinon timber and undergrowth of short shadscale.

Gradually ascend.

5.00 Rock point, projects S.

Descend gradually.

12.00 Rock canyon, about 30 ft. deep, drains S.

16.00 Ascend gradual SW. slope.

20.00 Rock point, projects S.E.

Descend abruptly.

27.00 Rocky gulch, about 150 ft. deep, drains S.E., ascend abruptly.

31.00 Rock point, 50 ft. high, projects S.E.

Descend abruptly.

35.00 Rocky canyon, 50 ft. deep, course S.E.

Ascend abruptly.

43.02 Set an iron post, 3 ft. long, 1 in. in dia., 24 in. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked

S 19

$\frac{1}{4}$

S 30

Subdivision of T. 23 S., R. 13 E.

Chains.

raise a mound of stone, 2 ft. base,
1½ ft. high N. of cor.

Note: On account of natural obstacles,
I am unable to set post in the ground.

45.00 Rock point, projects SE.

Descend abruptly.

50.00 Rock canyon, about 75 ft. deep,
course SE., ascend abruptly.

54.00 Rock point, about 30 ft. high, projects SE.
Descend abruptly.

56.00 Rock canyon, about 40 ft. deep,
course SE., ascend.

60.00 Rock point, projects SE.

Descend abruptly.

63.00 Rocky canyon, about 50 ft. deep,
course SE., ascend

70.00 Rock point, projects SE.

Descend

83.02 The true cor. point of secs. 19, 20, 29
and 30.

Land, mountainous with steep slopes
into small, dry canyons.

Surface, nearly bare surface rock with
a general SE. exposure.

Practically no soil.

Timber, scattering scrub cedar and
pinon.

Undergrowth, short shadscale.

Land of no value whatever.

Mountainous land 83.02 chs.

September 18, 1912

It is impossible to survey the line
bet. secs. 19 and 20 on account of
its falling on the precipitous walls
and breaks of a fork of Straight
canyon

October 10: At 8^{h.} 47^{m.} a.m. l.m.t.,

Chavis

I set off $38^{\circ} 49'$ on the lat. arc; $6^{\circ} 39'$ S. on the decl. arc; and determine a meridian with the solar at the cor. of secs. 16, 17, 20 and 21.

Thence I run West, on true line bet. secs. 17 and 20. Ascend gradually over rough mountainous land, over numerous sandstone points and canyons draining SE, through scattering scrub cedar and piñon timber and undergrowth of shadscale.

31.00 Sandstone point, about 400 ft. above sec. cor., projects SE.

Descend over West slope.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked

S 17 ✓
1/4

S 20

1912.

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.

Note: On account of natural obstacles I am unable to set post in the ground.

44.00 Rock canyon, about 200 ft. deep, course SE., ascend.

49.00 Rock point, projects SE., descend.

56.20 Rock canyon, about 80 ft. deep, course, SE., ascend.

58.60 Rock point, about 50 ft. high, projects SE., descend very abruptly.

61.00 Rock canyon, about 300 ft. deep, course SE.

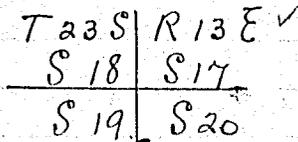
Ascend over small sandstone points and canyons, draining SE.

80.00 Set an iron post, 3 ft. long, 2 ins. in

Subdivision of T. 23 S., R. 13 E.

Chains.

dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 17, 18, 19 and 20. with brass cap marked



raise a mound ^{19/18} of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles I am unable to set post in the ground. Land, mountainous with steep slopes into canyons, draining SE. Surface, rough broken sandstone bed rock.

Practically no soil in mile:

Timber, scrub cedar and pinon.

Undergrowth, short shadscale.

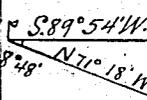
Mountainous or timbered land 8000 chs.

S. 89° 54' W., on random line bet. secs 18 and 19.

19.16

Edge of box canyon across which I cannot chain, bears N. and S. To determine distance across canyon I set a flag on line on a point on west side of canyon, then measure a base line S. 14° 26' E., 5.44 chs., to a point from which the flag bears N. 71° 18' W., from the flag the S. end of the base bears S. 71° 18' E. By separate measurement of each angle they are found to be 104° 20', 66° 52' and 8° 48'. I compute the distance as follows:

$$\begin{aligned} \log 5.44 \text{ chs.} &= 0.735599 \\ \log \sin 66^\circ 52' &= 9.963596 \\ \hline &= 0.699195 \end{aligned}$$



2. 69 91 95 ✓

$$\log \sin 8^{\circ} 48' = \frac{9. 18 46 51}{2. 69 91 95} \checkmark$$

$$\log 32.70 = 3. 51 45 44 \checkmark$$

32.70 cho. + 19.16 cho. = 51.86 cho. to point of triangulation. Note: It was impossible to get a longer base, from which the flag on west side of canyon could be seen.

I now measure $N. 89^{\circ} 54' E. 11.86$ cho. to

40.00 Set temporary $\frac{1}{4}$ sec. cor.

82.78 Intersect W. bdy. of the tp. at the cor. of secs. 13, 18, 19 and 24 heretofore described.

Thence I run

$N. 89^{\circ} 54' E.$, on true line bet. secs. 18 and 19.

Ascend gradually over mountainous land, covered with scrub cedar and pinon timber and undergrowth of shadescale, over small sandstone points and gulches draining S. into Straight canyon.

30.00 Point, about 250 ft. above sec. cor., projects SE., descend gradually.

30.92 Point of triangulation across canyon.

42.78 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for $\frac{1}{4}$ sec. cor., with brass cap marked.

S 18 ✓

$\frac{1}{4}$

S 19

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.

Note: On account of natural obstacles I am unable to set post in the ground.

44.00 Edge of impassible box canyon, about 800 ft. deep, bears N. and S.

Subdivision of T. 23 S., R. 13 E.

chains.

63.62 Point of triangulation and east edge of canyon, bears N. and S. Descend gradually.

66.00 Small, dry gulch, course SE. Ascend.

68.40 Sandstone point, projects S. Thence over numerous sandstone points and small canyons, draining SE.

82.78 The cor. of secs. 17, 18, 19 and 20. Land, mount ainous with steep slopes into canyons. Surface, rough broken sandstone surface rock and boulders. Soil, in W. $\frac{1}{2}$ mile, very shallow sand lying on sandstone bed rock which is in many places exposed. In E. $\frac{1}{2}$ mile, there is practically no soil. Timber, scattering scrub cedar and pino.

Undergrowth, short shadscale.

Land is of no value whatever.

Mount ainous land 82.78 chs.

October 10, 1912

October 12: At 7^h. 47^m. a. m. l. m. t., I set off 38° 49' on the lat. arc; 7° 24' S. on the decl. arc; and determine a meridian with the solar at the cor. of secs. 17, 18, 19 and 20

Thence I run

N. 0° 03' W., bet. secs. 17 and 18.

Over rough mount ainous land covered with scrub cedar and pino timber and undergrowth of shadscale. Ascend over SE. slope of sandstone surface rock.

6.00 Sandstone point, projects SE. Gradually descend.

Chaus.

9.00 Canyon, about 40 ft. deep, course SE. Ascend.

38.00 Edge of mesa, about 250 ft. above canyon, bears NW. and SE. Leave surface rock; descend very gradually across mesa, through heavy timber.

40.00 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft high for 1/4 sec. cor., with brass cap marked

S 18	S 17
1/4	

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles I am unable to set post in the ground.

70.00 Begin very gradual ascent

80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for cor. of secs. 7, 8, 17 and 18. with brass cap marked

T 23 S	R 13 E
S 7	S 8
S 18	S 17

1912

raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles I am unable to set post in the ground. Land, mountainous sandstone breaks in S. 38 chs., rolling mesa on remainder of mile.

Surface, covered with numerous sandstone boulders with considerable surface rock. Soil on mesa, light, fine, dry, warm.

Subdivision of T. 23 S., R. 13 E.

chains.

sandy loam of good texture, 6 to 18 ins. deep, on sandstone bed rock.

Timber, scrub cedar and pinon.

Undergrowth, short shadscale.

Good grass for grazing on mesa.

Land mountainous or heavily timbered
80.00 chs.

40.00

East, on random line bet. secs. 8 and 17
Set temp. $\frac{1}{4}$ sec. cor.

80.18

Intersect N. and S. line 2 lks. N. of the cor. of secs. 8, 9, 16 and 17.

Thence I run

N. $89^{\circ} 59'$ W., on true line bet. secs. 8 and 17.

Gradually ascend over mountainous land through scattering scrub cedar and pinon timber and undergrowth of shadscale.

6.00

Low ridge, bears NW. and SE.
Descend.

10.00

Small, dry gulch, drains SE.
Ascend SE. slope.

13.00

Ascend very gradual E. slope.

40.09

Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec cor., with brass cap marked

S 8 ✓
1/4

S 17

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.

52.00

Low point, projects S.
Descend abruptly.

57.00

Small, dry canyon, about 60 ft. deep, course SE., ascend.

61.00

Ascend very gradual over rolling mesa.

80.18

The cor. of secs. 7, 8, 17 and 18.

chaus.

Land mountainous with a gentle E. slope on E. 50 chs., and S. slopes on W. 30. 18 chs.

Surface, covered with numerous sandstone boulders.

Soil, light, dry, sandy loam of good texture, 6 to 18 ins. deep, on sandstone, with numerous places where the bed rock is exposed.

Timber, scrub cedar and pinon.

Undergrowth, short shadscale.

Good grass for grazing on mile.

Mountainous or timbered land 80.18 chs.

October 12: At this sec. cor. I set off $7^{\circ} 28' S.$, on the decl. arc; and at $11^{\text{h}} 47^{\text{m}}$ a. m. l. m. t., observe the sun on the meridian; the resulting lat. is $38^{\circ} 49.5$.

S. $89^{\circ} 54' W.$, on random line bet. secs. 7 and 18

40.00 Ret temporary $1/4$ sec. cor.

82.65 Intersect W. bdy. of the tp. 12 lks. S. of the cor. of secs. 7, 12, 13 and 18 heretofore described.

Thence I run

N. $89^{\circ} 59' E.$, on true line bet. secs. 7 and 18.

Over mountainous land, through dense forest of scrub cedar and pinon and undergrowth of short shadscale.

Gradually ascend.

20.00 Top of flat ridge, bears NE. and SW.

Thence across ridge.

29.00 Descend gradually over E. and SE. slopes.

41.00 Descend abruptly over solid sandstone bed: rock.

Leave dense cedar and pinon timber.

Subdivision of T. 23 S., R. 12 E.

chains.

42.65 Set an iron post, 3 ft. long, 1 in. in dia.,
24 ins. in the ground for $\frac{1}{4}$ sec. cor.,
with brass cap marked.

S 7
 $\frac{1}{4}$

S 15

1917

raise a mound of stone, 2 ft. base, $\frac{1}{2}$
ft. high N. of cor.

Cor. stands in small, dry canyon,
course S.

Thence across points and canyons in
solid surface rock.

43.70 Rock point, about 50 ft. high, projects S.
Descend abruptly.

54.40 Rock canyon, course SW.
Ascend abruptly.

58.00 Rock point, about 140 ft. above canyon
projects SE.
Descend

72.70 Small, dry canyon, course SW.
Ascend

82.65 The cor. of secs. 7, 8, 17 and 18.
Land rolling mountainous in W. $\frac{1}{2}$
mile and rough mountainous in E. $\frac{1}{2}$
mile.

Surface of W. $\frac{1}{2}$ mile, covered with
sandstone boulders., E. $\frac{1}{2}$ mile nearly
barren bed rock.

Soil, on W. $\frac{1}{2}$ mile, disintegrated sand-
stone, of poor quality, 6 to 18 ins. deep
on sandstone bed rock, and affording
considerable good grazing land, but
not suited to cultivation. Practically
no soil on E. $\frac{1}{2}$ mile.

Timber, scrub cedar and pinon.

Undergrowth, short shadescale.

Mountainous or timbered land 82.65 chs.

October 12, 1912.

October 14. At 8^{h.} 26^{m.} a.m. l.m. t₂ set off 38° 49½' on the lat. arc; 8° 09' S, on the decl. arc; and determine a meridian with the solar at the cor. of secs. 7, 8, 17 and 18.

Thence I run

N. 0° 03' W., bet. secs. 7 and 8.

Gradually ascend over rolling mesa top through heavy scrub cedar and junon timber and undergrowth of shadscale and salt sage.

37.00 Ascend more abrupt S. face of mesa

40.00 Set an iron post, 3 ft. long, 1 in. dia., 24 ins. in the ground for ¼ sec. cor., with brass cap marked

S 7	S 8
¼	

1912

raise a mound of stone, 2 ft. base, 1½ ft. high W. of cor.

51.00 Edge of narrow mesa, about 150 ft. above sec. cor., bears E. and W.

Thence across mesa.

53.30 N. edge of mesa, bears E. and W. descend abruptly.

70.00 Foot of mesa, about 100 ft. below top, bears E. and W.

Descend very gradually over N.E. slope.

80.00 Set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground for cor. of secs. 5, 6, 7 and 8, with brass cap marked

T 23 S	R 13 E
S 6	S 5

S 7	S 8
-----	-----

1912

raise a mound of stone, 2 ft. base,

Subdivision of T. 23 S., R. 13 E.

Chains.

1 1/2 ft. high W. of cor.

Land, rolling mountainous with gentle N. and S. slopes from narrow mesa, which stands up about 100 ft. above the surrounding country.

Surface covered with some boulders and numerous sandstone outcroppings.

Soil, light, dry, sandy loam of good quality, 6 to 24 ins. deep, on clay subsoil, or sandstone bed rock.

Timber, scrub cedar and pinon.

Undergrowth, short shadscale.

Good grass for grazing.

Mountainous or timbered land 8000 chs.

S. 89° 59' E., on random line bet. secs. 5 and 8

40.00 Set temporary 1/4 sec. cor.

79.94 Intersect N. and S. line 5 lks. N. of the cor. of secs. 4, 5, 8 and 9.

Thence I run

N. 89° 57' W., on true line bet. secs. 5 and 8.

Over rough mountainous land, through dense forest of cedar and pinon and undergrowth of short shadscale.

Ascend abruptly from canyon over ledges bearing N. 60° W. and S. 60° E.

13.80 Top of canyon wall, bears N. 60° W., and S. 60° E.

Thence over rolling mountainous land.

39.97 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for 1/4 sec. cor., with brass cap marked.

S 5
1/4

S 8

1912

chains.

raise a mound of stone, 2 ft. base,
1 1/2 ft. high N. of cor.

69.60 Enter more broken land, thence over
numerous small rocky points
and gulches draining N.E. and N.

79.94 The cor. of secs. 5, 6, 7 and 8.
Land, rough and rolling mountainous.
The E. 13.80 chs. and W. 10.40 chs. are
very rocky and broken and are of no
value. The remainder of mile lies on
gentle N.E. and E. slopes and
affords excellent grazing.

Soil on gentle slopes, light sandy
loam, quite rich in sand, 8 to 30 ins
deep on clay sub-soil.

Timber, scrub-cedar and pinon.
Undergrowth, short shadecale.

Mountainous or timbered land 79.94
chs.

October 14: The sky is overcast at
noon, observations for lat. are
impossible

October 15: Reflecting from a solar
line bet. secs. 7 and 8 carried up to
this point yesterday, I begin at the
cor. of secs. 5, 6, 7 and 8.

Thence I run
S. 89° 59' W., on random line bet. sec.
6 and 7.

40.00 Set temporary 1/4 sec. cor.

82.60 Intersect W. bdy. of the tp. 14 lks. N.
of the cor. of secs. 1, 6, 7 and 12,
heretofore described.

Thence I run
N. 89° 53' E., on true line bet. secs. 6
and 7.

Over nearly level mesa top, through
dense forest of scrub cedar and

Subdivision of T. 23 S., R. 13 E.

chains.

pinon and undergrowth of shadscale and salt sage.

42.60 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in the ground for $\frac{1}{4}$ sec. cor., with brass cap marked

S 6 ✓
1/4

S 7

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high N. of cor.

44.00 Edge of mesa, bears NW. and SE. Descend abruptly over NE. slope.

53.00 Foot of mesa, 90 ft. below top, bears NW. and SE.

Descend very gradual E. and NE. slopes.

82.60 The cor. of secs. 5, 6, 7 and 8.

Land rolling mountainous and nearly level mesa. Gentle E. and NE. slopes from mesa.

Surface E. of mesa covered with numerous sandstone boulders.

Soil, light, fine, dry, warm, sandy loam of good texture, especially on the mesa which is capped with limestone.

Timber, scrub cedar and pinon.

Undergrowth, short shadscale and salt sage.

Good grass for grazing.

Mountainous or timbered land,
82.60 chs.

October 15, 1912

October 14: For solar observation see line bet. secs. 7 and 8.

N. $0^{\circ}03'$ W., on random line bet. secs. 5 and 6.

40.00 Set temporary $\frac{1}{4}$ sec. cor.

Intersect N. bdy. of the tp. 19 lks. N. 89° 59' E., of the cor. of secs. 5, 6, 31 and 32 heretofore described.

Thence I run S. 6° 11' E., on true line bet. secs. 5 and 6.

Over level top of flat knoll covered with considerable undergrowth of shade-scale and salt sage.

2.50 Edge of knoll, bears E. and W. Descend abruptly;

3.50 Foot of knoll, 100 ft. below top, bears E. and W.

Descend very gradually over rolling mountainous land.

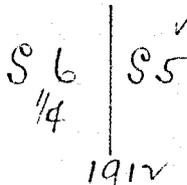
19.00 Enter heavy cedar and juniper timber, bears NW. and SE.

31.40 Descend abruptly over sandstone ledges, bearing NW. and SE.

34.80 Dry canyon, about 100 ft. deep, course SE.

Ascend abruptly over sandstone ledges.

39.84 Set an iron post, 3 ft. long, 1 in. in dia., 24 ins. in a mound of stone and earth, 4 ft. base, 2 ft. high for 1/4 sec. cor., with brass cap marked



raise a mound of stone, 2 ft. base, 1 1/2 ft. high W. of cor.

Note: On account of natural obstacles, I am unable to set post in the ground.

42.00 Top of canyon, bears NW. and SE. Ascend very gradual over nearly E. slope.

Subdivision of T. 23 S., R. 13 E.

chains.

50.10 Rim of canyon, bears NW. and SE. Descend abruptly over sandstone ledges.

54.00 Dry canyon, about 70 ft. deep, course SE. Ascend abruptly over sandstone ledges.

56.00 Rim of canyon, bears NW. and SE. Ascend very gradually over gentle NE. slope.

79.84 The cor. of secs. 5, 6, 7 and 8. Land, rolling mountainous, on gentle NE. and SE. slopes, cut by two narrow box canyons, courses SE., general E. exposure.

Surface covered with numerous sandstone boulders. The walls and bottoms of the canyons are sandstone, being eroded from the solid rock.

Soil, light, fine, dry, warm sandy loam of good texture, suited to cultivation on the gentle slopes if watered.

Good grazing on mile, with the exception of the canyons.

Timber, scrub cedar and pinon. Undergrowth, short shadscale and salt sage.

Mountainous or timbered land,
79.84 chs.

October 14, 1912

Robert E. Clark
U. S. Transit man

This township contains nearly every variety of land, from rolling desert lands to rough mountainous and the soil ranges from a rich sandy loam to rocky. The soil of the desert lands in secs. 1, 2, 11, 12, 13, 14, E $\frac{1}{2}$ sec. 15, E $\frac{1}{2}$ sec. 22, 23, 24, 25, 26, 27, 34, 35 and 36 is generally a rich sand and gravelly and on account of the aridness of the country has a very hard dry sand and clay sub-soil. A short undergrowth of shadescale is found on the entire desert and also an abundant growth of wild grasses which afford excellent grazing. This land would produce good crops if watered. The remaining part of the township with the exception of the line bet. secs. 1 and 2 lies on the east breaks of the San Rafael swell, and with the exception of some rolling land in the NW. portion of the township are rough and mountainous in the extreme. The rolling land lies practically on the Swell and affords some good grazing. Portions of this rolling land would produce good crops if watered, but the difficulty of getting water on the land would probably make the cost of irrigation prohibitive. Small grains could probably be raised on the best of this land by the dry farming method. From this rolling land the swell breaks off very abruptly to the SE. and E., in succession of precipitous sandstone ridges and canyons. The soil of these breaks has all been eroded away, leaving nothing but the bare sandstone exposed. These sandstone

General Description

breaks support a very scanty growth of scrub cedar and Junon timber and some shadescale, salt sage and Brigham brush. This timber and brush finds a foot hold in crevices in the rock which catch ^{and} hold barely sufficient soil to support them. There is also some grass in these crevices, but it is scarce and the country is so rough that it would be impossible to get stock into it. This land is totally worthless.

San Rafael Reef which follows around the foot of the San Rafael Swell, is the Jura-Triassic sandstone which has been tilted up at an angle of from 40° to 60° and is from 500 to 800 ft. in height.

The east, or outer side of this reef, consists of the smooth, bare, sandstone slopes, totally devoid of any kind of vegetation and impossible to climb in most places.

The back or west side of this reef, breaks off in generally perpendicular sandstone cliffs from 300 to 500 ft. in height.

The general drainage of this township is to the east. The drainage of the country to the west cuts through this reef in very narrow and deep canyons.

The only water in the township is found in holes or tanks in the bottom of the canyons and hollows. These holes are formed by the erosion of storm waters which come down the canyons, and bring in solid rock hold water for long

periods. Some of these tanks are of such size that they probably never will dry up.

There are no settlers in this township nor the township to the west.

The township to the west contains much desirable grazing land, and also much land which could probably be dry farmed with profit.

Geological formation: Jura Triassic and Upper Carboniferous.

There is no indication of Mineral in the Co.

Stoward. W. M. Miller.

U. S. Surveyor.

Robert E. Clark.

U. S. Transit man.

CERTIFICATE OF ASSISTANTS.

We, the undersigned, hereby certify upon honor that we assisted, to the best of our skill and ability, Howard W. Miller, U. S. Surveyor, during the periods and in the capacities stated opposite our several signatures, in surveying all those parts or portions of N., S., E. and W. boundaries of T. 20 S., R. 14 E., subdivision of T. 20 S., R. 14 E.; N., S., E. and W. boundaries of T. 24 S., R. 13 E., subdivision of T. 24 S., R. 13 E.; E. and N. boundaries of T. 23 S., R. 13 E. and subdivision of T. 23 S., R. 13 E.

of the Salt Lake Base and Meridian, in the State of Utah, which are represented in the foregoing field notes as having been executed by him, and under his direction; and that said survey has been, in all respects, to the best of our knowledge and belief, well and faithfully executed.

NAME.	PERIOD OF SERVICE.		CAPACITY.
	BEGUN.	ENDED.	
<u>Henry Festus</u>	<u>June 29, 1912</u>	<u>July 14, 1912</u>	<u>monumentman</u>
<u>Louis West</u>	<u>June 29, 1912</u>	<u>July 19, 1912</u>	<u>chainman</u>
<u>Donald Coray</u>	<u>June 29, 1912</u>	<u>July 26, 1912</u>	<u>flagman</u>
<u>Harvey Halton</u>	<u>July 29, 1912</u>	<u>September 12, 1912</u>	<u>chainman</u>
<u>Albert Payne</u>	<u>July 18, 1912</u>	<u>September 12, 1912</u>	<u>monumentman</u>
<u>David M. Goldman</u>	<u>August 5, 1912</u>	<u>September 12, 1912</u>	<u>chainman</u>
<u>Edwin Gann</u>	<u>June 29, 1912</u>	<u>September 12, 1912</u>	<u>chainman</u>

Subscribed and certified to before me on the dates of the final service as shown above.

Howard W. Miller,

U. S. Surveyor.

I, Howard W. Miller, U. S. Surveyor, do solemnly swear that, in pursuance of special instructions received from the U. S. Surveyor General for Utah, bearing date of the Tenth¹⁰ day of June, 1914, I have well, faithfully, and truly, in my own proper person, and in strict conformity with said instructions, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of N., E., S. and W. boundaries of T. 20 S., R. 14 E.; N., E., S. and W. boundaries of T. 24 S., R. 13 E.; E. and N. boundaries of T. 23 S., R. 13 E. and subdivision of T. 23 S., R. 13 E. of the Salt Lake Base and Meridian, in the State of Utah, which are represented in the foregoing field notes as having been executed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the U. S. Surveyor General for Utah and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

Howard W. Miller
U. S. Surveyor.

Subscribed by said Howard W. Miller, and sworn to before me
this 31 day of March, 1914.

Thomas Hull
U. S. Surveyor-General



For final oath of Transitman Robert E. Clark, see book "F" T. 20 S. R. 15 E.

APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,
Salt Lake City, Utah, March 8, 1915.

The foregoing field notes of the survey of the Subdivisional lines of Township No. 23 South, Range No. 13 East of the Salt Lake Base and Meridian, Utah,

executed by Howard W. Miller and Robert E. Clark under his special instructions dated June 10, 1914, having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.

J. C. Johnson
U. S. Surveyor General.

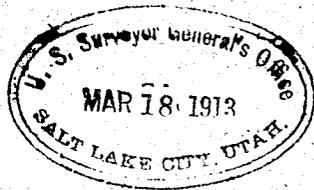
I certify that the foregoing transcript of the field notes of the above-described surveys in _____, has been correctly copied from the original notes on file in this office.

Blank

Page

Blank

Page



E.
BOOK A-399

MCS
FIELD NOTES

E.F. Clark

OF THE SURVEY OF THE
S U B D I V I S I O N

O F

TOWNSHIP NO. 22 SOUTH, RANGE NO. 13 EAST,

Of the SALT LAKE BASE AND Meridian,

In the State of U T A H

EXECUTED BY

ROBERT E. CLARK

In the capacity of U.S. ^{Transitman}~~Surveyor~~, under instructions dated June 10, 1912, issued by the United States Surveyor General to govern surveys included in Group No. 18, which were approved by the Commissioner of the General Land Office, by telegram dated ^{June 19}▲, 1912, pursuant to authority contained in the Act of Congress dated _____, 191_____

Survey commenced September 24, 1912

Survey completed October 29, 1912.

*Sub. 42-10-92
C-200-01-08*

FIELD NOTES

BOOK A-399

INDEX DIAGRAM.

Township 22 South, Range 13 East

6	49	5	33	4	19	3	17	2	1
48		47		31		17			10
7	46	8	30	9	15	10		11	12
45		44		29					9
18	43	17	28	16	14	15		14	13
41		40		27					7
19	39	20	26	21	13	22		23	24
38		37		25					5
30	36	29	23	28	12	27		26	4
35		34		22					3
31	33	32	21	33	11	34		35	2
									36

Survey commenced Sept. 24, 1912, and executed with a Young and Son's mountain transit No. 7147, fitted with a Smith solar. The transit is provided with opposite double verniers, reading to minutes, which is also the least count of the swinging, latitude and declination arcs.

Test of instrument.

I examine the adjustments of the transit, and correct the errors, then to test the solar attachment, by comparing its indications, resulting from observations made on the sun during a.m. and p.m. hours, with a meridian determined by observation on Polaris; I proceed as follows:

At my camp in the SW. $\frac{1}{4}$ sec. 13, Tp. 22 S. R. 13 E., in lat. $38^{\circ} 54'$ N., and long. $110^{\circ} 28'$ W., at 6h 45m p.m., with my instrument set up over the S. end of the meridian later established, I commence following the eastern progress of Polaris, and when the star reaches its maximum position in azimuth and begins to recede, I mark the line thus determined, on a stake set firmly in the ground, about 5.00 chs. to the N.

September 28, 1912.

Sept. 29, 1912: I lay off the azimuth of Polaris, $1^{\circ} 29.6'$ to the west, and mark the meridian thus determined, by a tack driven in a wooden peg, set firmly in the ground, west of the peg set last night. Magn. decl. is $16^{\circ} 10'$ E. At 9h 00m a.m., l.m.t., I set off $38^{\circ} 54'$ N. on the lat. arc, and $2^{\circ} 25'$ S. on the decl. arc, and determine a meridian with the solar. The solar meridian thus determined falls 0.1 ins. to the W. of the meridian determined by observation on Polaris.

At 3h 10m p.m., l.m.t., I set off $38^{\circ} 54'$ N. on the lat. arc, and $2^{\circ} 31'$ S. on the decl. arc, and determine a meridian with the solar. The solar meridian agreeing with the Polaris meridian. I therefore conclude that the adjustments of the instrument are satisfactory.

Measurements.

A steel tape, five chains long, was used in the work completed in Group 18 during the season, together with clinometer for determining slope angles, and the reduced distances only, appear in the official notes.

The tape used was tested on Sept. 22, 1912, comparison being made with a standard tape, 66 ft. in length, kept and used only for that purpose.

Sept. 22, 1912.

Sept. 24, 1912: At 9h 40m a.m., l.m.t., I set off 38° 51' N. on the lat. arc, and 0° 29' S. on the decl. arc, and determine a meridian with the solar, at the cor. of secs. 35 and 36, on S. bdy. of Tp. Heretofore described.

Thence I run, on sectional guide meridian North on W. bet. secs. 35 and 36; ascending abruptly over rolling mountainous land, covered with considerable undergrowth of shadscale and Brigham brush.

1.50 Edge of mesa, about 20 ft. above cor., bears NW. and SE. Thence across mesa.

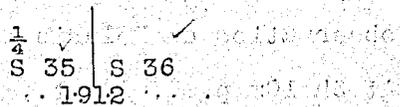
20.00 Point, about 70 ft. above sec. cor., falls SE.; descend.

27.00 Dry gulch, about 50 ft. deep, course NE. Thence across numerous small, broken, rock points, falling E.

31.00 Rock point, falls E.; descend.

35.60 Dry gulch, about 40 ft. deep, course SE.; ascend.

40.00 Set an iron post, 3 ft. long, 1 in. in diam., only 4 ins. in the ground, on account of underlying rock, surrounded by a mound of stone, 4 1/2 ft. base, 2 1/2 ft. high, for 1/2 sec. cor., with brass cap, mkd.



raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor.

41.80 Point, about 60 ft. high, falls E.; descend gradually.

43.00 Descend abruptly N. slope.

Chains

- 48.00 Dry gulch, about 50 ft. deep, course SE.; ascend.
- 54.00 Point, about 40 ft. high, falls E.; descend.
- 60.00 Dry gulch, about 50 ft. deep, course NE.; ascend.
- 65.00 Point, falls E.; descend abruptly.
- 67.20 Foot of point, bears E. and W. Thence across flat covered with numerous large, red sandstone boulders.
- 80.00 Set an iron post, 5 ft. long, 2 ins. in diam., 24 ins. in the ground, for cor. of secs. 25, 26, 35 and 36, with brass cap, mkd.

T 22 S	R 13 E
S 26	S 25
S 35	S 36

1912

raise a mound of stone, 5 ft. base, 3 ft. high, W. of cor. Land, rolling mountainous, rather broken by small gulches and points; general E. exposure.

Soil, light, fine, dry, warm, sandy clay, rich in gypsum, eroded in some places to bed rock, to 30 ins. in depth on sandstone bedrock; suited to cultivation on the gentler slopes, if watered. Fair grazing throughout the mile. No timber; undergrowth, shadscale, Brigham brush and salt sage.

N. 89° 59' E. on random line bet. secs. 25 and 36.

- 40.00 Set temp. $\frac{1}{4}$ sec. cor.
- 80.76 Intersect E. bdy. of Tp. 11 lks. N. 0° 37' E. of ^{temp.} cor. of secs. 25 and 36. Thence I run N. 89° 56' W. on true line bet. secs. 25 and 36; over nearly level mesa land, covered with considerable undergrowth of shadscale, salt sage and Brigham brush.
- 27.80 Edge of mesa, bears NW. and SE.; desc. SW. slope.
- 30.70 Dry gulch, about 40 ft. below mesa, course SE.; ascend.
- 35.70 Low point, falls SE.; descend gradually.
- 40.76 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.

$\frac{1}{4}$ S 25
S 36

1912

- 47.30 raise a mound of stone, 2 ft. base, 1 1/2 ft. high, N. of cor. Bend in dry gulch, from SW. to SE.; asc. gradually along N. side of gulch, course E.
- 66.50 Ascend abruptly S. slope.
- 69.80 Top of low point, falls W.; desc. abruptly along NW. slope of point.
- 74.70 Foot of point. Ascend gradually across flat, covered with numerous large, red sandstone boulders.
- 80.76 The cor. of secs. 25, 26, 35 and 36.
Land, rolling mountainous and nearly level mesa; general E. and SE. exposure.
Soil, light, fine, dry, warm, sandy loam of good texture, 8 to 18 ins. deep, on clay subsoil. Well suited to cultivation if watered and affording good grazing.
No timber: undergrowth, shadscale, salt sage and Brigham brush.

North on sectional guide meridian, bet. secs. 25 and 26; ascending gradually over rolling mountainous land, across small flat draining SE., covered with numerous large, red sandstone boulders, through scattering undergrowth of shadscale, salt sage and Brigham brush.

- 10.40 Ascend abruptly S. slope.
- 15.00 Edge of mesa, about 50 ft. above cor., bears NW. and SE. Thence across nearly level mesa.
- 24.00 Descend gradually NE. slope.
- 34.00 Dry gulch, about 50 ft. deep, course SE.; ascend.
- 40.00 Set an iron post, 3 ft. long, 1 in. in diam., only 4 ins. in the ground, on account of underlying rock, supported by a mound of stone, 4 1/2 ft. base, 2 1/2 ft. high, for 1/2 sec. cor., with brass cap, mkd.

1/2
S 26 S 25
1912

- 53.80 raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor. Low spur, falls SE.; descend.

Chains

59.90 Dry gulch, about 50 ft. deep, course E.
 Thence over numerous small adobe spurs and gulches.
 80.00 Set an iron post, 3 ft. long, 2 ins. in diam., only 4 ins. in the ground, on account of underlying rock, supported by a mound of stone, 4 ft. base, 2½ ft. high, for cor. of secs. 23, 24, 25 and 26, with brass cap, mkd.

T 22 S	R 13 E
S 23	S 24
S 26	S 25
1912	

raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor. Land, rolling mountainous, consisting of small, flat points or mesas in the S. ¾ mile, and more sharply broken points and gulches in the N. ¼ mile; general SE. exposure. Soil, light, fine, dry, warm, sandy clay in S. ¾ mile, 2 to 24 ins. deep on sandstone bedrock; disintegrated shale of very poor quality, rich in gypsum, in N. ¼ mile. Southern benches suited to agriculture if watered. Some grazing throughout the mile. No timber; undergrowth, scattering shadscale, salt sage and Brigham brush. Instrument in transit at noon prevents lat. obsn. Sept. 24, 1912.

Sept. 25, 1912: At 8h a.m., l.m.t., I set off 38° 53' N. on the lat. arc, and 0° 50' S. on the decl. arc, and determine a meridian with the solar, at the cor. of secs. 23, 24, 25 and 26. Thence I run S. 89° 56' E. on random line bet. secs. 24 and 25.

40.00 Set temp. ¼ sec. cor.

80.72 Intersect E. bdy. of Tp. 9 lks. S. 0° 07' E. of ^{temp.} cor. of secs. 24 and 25. Thence I run West on true line bet. secs. 24 and 25; ascending abruptly over rough mountainous land sloping SE., covered with scattering undergrowth of shadscale, salt sage and Brigham brush.

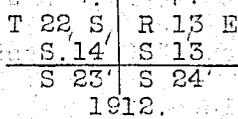
4.40 Spur, about 50 ft. above cor., falls SE.; desc. gradually.

- 21.60 Dry gulch, about 50 ft. deep, course SE.; asc. gradually.
- 40.72 Set an iron post, 3 ft. long, 1 in. in diam., only 18 ins. in the ground, on account of underlying rock, supported by a mound of stone, for $\frac{1}{2}$ sec. cor., with brass cap, mkd.
- $\frac{1}{2}$ S 24
 S 25
 1912
- raise a mound of stone, 2 ft. base, 2 ft. high, N. of cor. Ascend abruptly SE. slope of knoll.
- 49.30 Top of S. slope of rock capped knoll, about 350 ft. high. Line passes about 100 ft. below top of knoll. Descend abruptly SW. slope.
- 72.50 Dry gulch, about 200 ft. below knoll, course SE.; ascend.
- 76.60 Spur, about 40 ft. above gulch, falls SE.; desc. gradually.
- 79.70 Ascend abruptly onto small adobe spur falling SE.
- 80.72 The cor. of secs. 23, 24, 25 and 26.
- Land, rough and mountainous; general S. exposure. Soil, disintegrated shales, rich in gypsum, 8 to 24 ins. deep on bedrock. Very poor quality, in some places being as light as wood ashes.
- Not suited to agriculture on account of poor quality of soil; affords very little grazing.
- No timber; undergrowth, scattering shadscale, salt sage and Brighambrush.
-
- North on sectional guide meridian bet. secs. 23 and 24; ascending gradually over mountainous land, over broken adobe and gypsum hills covered with scattering undergrowth of shadscale, salt sage and Brighambrush.
- 16.80 Low point, falls E.; descend gradually.
- 30.00 Small, dry gulch, course SE.; ascend gradually.
- 40.00 Set an iron post, 3 ft. long, 1 in. in diam., only 8 ins. in the ground, on account of underlying rock, surrounded by a mound of stone, 4 ft. base, 2 ft. high, for $\frac{1}{2}$ sec. cor., with brass cap, mkd.

$\frac{1}{2}$ S 23 | S 24
 1912

Chains

- 48.60 raise a mound of stone, 2 $\frac{1}{2}$ ft. base, 2 ft. high, W. of cor. Low point, falls E.; descend gradually. Enter scattering cedar and pinon timber.
- 56.00 Small, dry gulch, course N. 10° E.; asc. gradually.
- 63.60 Rock point or reef, 50 ft. high, falls NE.; desc. gradually. Instrument in transit at noon, preventing latitude obsn.
- 79.10 Dry gulch, about 75 ft. below reef, course N. 20° E.; ascend gradually.
- 80.00 Set an iron post, 3 ft. long, 2 ins. in diam., only 12 ins. in the ground, on account of underlying rock, supported by a substantial mound of stone, for cor. of secs. 13, 14, 23 and 24, with brass cap, mkd.



raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor. Land, mountainous, consisting of numerous small, broken, adobe and gypsum points and arroyos; general E. exposure. Soil, shallow, disintegrated shales, rich in gypsum and of very poor quality; very fine and light of consistency of ashes, mixed in places with gravel, 4 to 12 ins. deep on sandstone bedrock. Timber, scrub cedar and pinon; undergrowth, scattering shadscale, salt sage and Brigham brush. Land is not suited to agriculture and affords little grazing.

- 40.00 East on random line bet. secs. 13 and 24. Set temp. $\frac{1}{4}$ sec. cor.
- 80.75 Intersect E. bdy. of Tp. 14 lks. N. 0° 28' E. of \wedge cor. of secs. 13 and 24. Thence I run N. 89° 54' W. on true line bet. secs. 13 and 24; descending very gradually over rolling mesa, covered with considerable undergrowth of shadscale and salt sage.
- 11.00 Dry arroyo, course N. 20° E.; asc. very gradually.
- 29.70 Descend very gradually W. slope. Point for $\frac{1}{4}$ sec. cor. will fall on very steep slope, in

loose earth where it would be liable to destruction by slide. I therefore perpetuate this cor. as follows; at
38.03 Set an iron post, 3 ft. long, 1 in. in diam., on surface rock, surrounded by a mound of stone, $4\frac{1}{2}$ ft. base, $2\frac{1}{2}$ ft. high, for $\frac{1}{2}$ sec. cor., with brass cap, mkd.

$\frac{1}{2}$ S. 13'
S 24'
WC
1912

raise a mound of stone, 3 ft. base, 3 ft. high, N. of cor.

38.15 Top of sandstone ledge, 50 ft. high, at edge of mesa, bears N. and S.; descend very abruptly W. slope.

40.75 Point for $\frac{1}{2}$ sec. cor., on steep hill side. Cor. not set.

44.60 Dry gulch, about 300 ft. below mesa, course N.; asc. abruptly E. slope.

45.60 Descend very gradually W. slope.

70.50 Dry gulch, about 50 ft. deep, course N. 20° E.; ascend over E. slope.

78.20 Small sandstone point or reef, bears N. and S.

Enter scattering cedar and pinon timber and descend abruptly W. slope.

80.00 Dry gulch, about 40 ft. below reef, course N. 20° E. Ascend gradually.

80.73 The cor. of secs. 13, 14, 23 and 24.

Land mountainous in W. 50.00 chs., and rolling mesa in E. 30.00 chs., general N. exposure.

Soil, in W. 50.00 chs., disintegrated shales of very poor quality, rich in gypsum, with considerable outcropping sandstone, 8 to 30 ins. deep on sandstone bedrock; E. 30.00 chs., light, fine, dry, warm, sandy loam, 8 to 30 ins. deep on gypsum subsoil, suited to cultivation if watered. W. 50.00 chs. non-agricultural. Some grazing throughout the mile.

Timber, scattering scrub cedar and pinon; undergrowth, shadscale and salt sage.

Sept. 25, 1912.

Chains

The line bet. secs. 13 and 14 lies along the steep E. slopes of San Rafael Reef, where it is absolutely impossible to survey, and is totally worthless.

I therefore proceed to establish the line bet. secs. 12 and 13 as follows:

The Easting of the Tp. line at the cor. of secs. 12 and 13 is 1.03 chs., making the theoretical length of the line bet. secs. 12 and 13, 81.03 chs.

Sept. 27, 1912: At 8h 05m a.m., l.m.t., I set off $38^{\circ} 55'$ N. on the lat. arc, and $1^{\circ} 37'$ S. on the decl. arc, and determine a meridian with the solar, at the cor. of secs. 12 and 13, on E. bdy. of Tp. heretofore described. Thence I run S. $89^{\circ} 59'$ W. on true line bet. secs. 12 and 13; descending over rough mountainous land, over NW. slope, covered with scattering undergrowth of shadscale and salt sage.

- 8.00 Dry gulch, about 50 ft. below cor., course NE.; ascend.
- 20.00 Spur or point, about 30 ft. above gulch, falls E.; desc. very gradually across mesa.
- 33.00 Edge of mesa, bears NE. and SW.; desc. abruptly.
- 36.20 Dry gulch, about 50 ft. below mesa, course NE.; asc.
- 39.70 Low point, falls NE.; desc.
- 41.03 Set an iron pest, 3 ft. long, 1 in. in diam., only 12 ins. in the ground, on account of underlying rock, supported by a mound of stone, 4 ft. base, $1\frac{1}{2}$ ft. high, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.

$\frac{1}{4}$ S 12
S 13
1912

raise a mound of stone, 3 ft. base, 2 ft. high, N. of cor.

- 44.00 Low point, falls NE.; continue to descend.
- 46.00 Dry gulch, course NE.; asc. very abruptly.
- 51.35 Foot of San Rafael Reef, bears N. 30° E. and S. 30° W. The remainder of the mile is absolutely impossible to survey. I raise a mound of stone 2 ft. base, 2 ft. high at this point to mark the line.

Land, generally rough and mountainous, broken by small, sharp gypsum points and arroyos.

General NE. exposure.
 Soil, light, fine, dry, warm, sandy clay, rich in gypsum,
 6 to 14 ins. deep on stiff clay subsoil or on bedrock;
 very poor in quality and not adapted to cultivation.
 Some grazing on the gentler slopes.
 No timber; undergrowth, scattering shadscale and salt sage.

The line bet. secs. 11 and 12 being impossible to survey,
 I establish the line bet. secs. 1 and 12 as follows:
 Sept. 27, 1912: At 2h p.m., 1.m.t., I set off $38^{\circ} 55.5'$
 N. on the lat. arc, and $1^{\circ} 43.5'$ S. on the decl. arc, and
 determine a meridian with the solar, at the cor. of secs.
 heretofore described.
 1 and 12, on E. bdy. of Tp. The Easting of the range line
 at this point is 68 lks., making the theoretical length
 of the line bet. secs. 1 and 12, 80.68. Thence I run
 S. $89^{\circ} 59'$ W. on true line bet. secs. 1 and 12; ascending
 over rough mountainous land, over SE. slope, through
 scattering undergrowth of shadscale, salt sage and

Brigham brush.

- 1.50 Dry gulch, drains NE.
- 5.00 Low point, falls NE.; descend.
- 8.00 Small, dry gulch, course NE.; ascend abruptly, over face
of San Rafael Reef.
- 21.65 On face of San Rafael Reef, about 150 ft. above gulch.

Impossible to survey further on this line on account of
 smooth, steep sandstone slopes of San Rafael Reef.
 Set an iron post, 3 ft. long, 1 in. in diam., on surface
 rock, surrounded by a mound of stone, $4\frac{1}{2}$ ft. base, $2\frac{1}{4}$ ft.
 high, for witness cor. to $\frac{1}{4}$ sec. cor. bet. secs. 1 and 12,
 with brass cap, mkd.

WC
 $\frac{1}{4}$ S. 12.
 S 12.
 1912

raise a mound of stone, 3 ft. base, 3 ft. high, N. of cor.
 Land, rough and mountainous, on general NE. exposure.
 Surface broken by ledges and steep sandstone slopes from
 San Rafael Reef.
 Soil, light, fine, dry, warm, sandy loam, 3 to 14 ins.

Chains

deep, on sandstone bedrock, and on the steep slopes of San Rafael Reef the soil is all eroded away, leaving only the smooth, bare, white sandstone. Not suited to agriculture on account of steep slopes and shallowness of the soil. Some grazing on the gentler slopes in the eastern portion of the mile.

No timber; undergrowth, shadscale, salt sage and Brigham brush.

Instrument in transit at noon prevents lat. obsn.
Sept. 27, 1912.

Oct. 19, 1912: At 8h 20m a.m., l.m.t., I set off $38^{\circ}51'$ N. on the lat. arc, and $9^{\circ}58'$ S. on the decl. arc, and determine a meridian with the solar, at the cor. of secs. 3, 4, 33 and 34, on S. bdy. of Tp., heretofore described. Thence I run N. $0^{\circ}01'$ W. bet. secs. 33 and 34; descending over rough mountainous land, through heavy cedar and pinon timber and scattering undergrowth of shadscale and Brigham brush.

16.30 Desc. very abruptly N. slope, over barren surface rock.

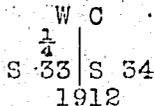
26.50 Dry canon, about 150 ft. below cor., course NE.; asc. abruptly.

32.00 Sandstone point, about 75 ft. high, falls NE.; descend abruptly N. slope.

Point for $\frac{1}{4}$ sec. cor. will fall in bed of dry canon, where it would be liable to destruction by flood waters.

I therefore perpetuate this cor. as follows; at

37.20 Set an iron post, 3 ft. long, 1 in. in diam., on surface rock, surrounded by a mound of stone, $4\frac{1}{2}$ ft. base, $2\frac{1}{2}$ ft. high, for witness cor. to $\frac{1}{4}$ sec. cor. bet. secs. 33 and 34, with brass cap, mkd.



raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor.

Descend very abruptly over precipitous wall of canon.

40.00 Dry canon, about 150 ft. deep, course E.; asc. abruptly.

Point for $\frac{1}{4}$ sec. cor., cor. not set.

- 45.00 Rock point, about 100 ft. high, falls NE.; continue to ascend more gradually.
- 65.00 Ridge, bears NW. and SE.; desc. over broken NE. slope.
- 80.00 Set an iron post, 3 ft. long, 2 ins. in diam., only 6 ins. in the ground, on account of underlying rock, surrounded by a mound of stone, $4\frac{1}{2}$ ft. base, 2 ft. high, for cor. of secs. 27, 28, 33 and 34, with brass cap, mkd.

T 22 S	R 13 E
S 28	S 27
S 33	S 34
1912	

raise a mound of stone, 2 ft. base, 2 ft. high, W. of cor. Land, rough and mountainous on steep slopes into canons draining E. and NE. Surface covered with sandstone boulders, with considerable outcropping surface rock. Soil, very shallow disintegrated sandstone of poor quality, and in many places only bare surface rock. Not suited to agriculture and affords little grazing.

Timber, scrub cedar and pinon; undergrowth, shadscale and Brigham brush.

Instrument in transit at noon prevents lat. obsn.

Oct. 21, 1912: At 9h a.m., l.m.t., I set off $38^{\circ} 52'$ N. on the lat. arc, and $10^{\circ} 42'$ S. on the decl. arc, and determine a meridian with the solar, at the cor. of secs. 27, 28, 33 and 34. Thence I run N. $0^{\circ} 01'$ W. bet. secs. 27 and 28; descending over rough mountainous land, covered with scattering cedar and pinon timber and undergrowth of Brigham and arrow brush, along broken NE. slope. These slopes consist of practically bare surface sandstone.

- 17.50 Dry canon, about 80 ft. below cor., course SE.; ascend.
- 23.00 Rock point, about 50 ft. high, falls SE.; descend.
- 27.00 Small, dry gulch, about 40 ft. deep, course SE.; ascend gradually S. slope.
- 40.00 Set an iron post, 3 ft. long, 1 in. in diam., on surface rock, surrounded by a mound of stone, $4\frac{1}{2}$ ft. base, $2\frac{1}{2}$ ft. high, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.

Chains

$\frac{1}{4}$ |
 S 28 | S 27
 1912

raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor.
 Ascend abruptly S. slope.

43.00 Edge of mesa, about 100 ft. above gulch, bears NW. and SE.
 Thence across nearly level mesa.

55.50 Edge of mesa, bears NW. and SE.; desc. abruptly NE. slope.

65.00 Small, dry gulch, about 100 ft. deep, course SE.; ascend.

76.00 Point, about 50 ft. high, falls SE.; desc.

80.00 Set an iron post, 3 ft. long, 2 ins. in diam., on surface
 rock, surrounded by a mound of stone, 4 $\frac{1}{2}$ ft. base, 2 $\frac{1}{2}$ ft.
 high, for cor. of secs. 21, 22, 27 and 28, with brass cap,
 mkd.

T 22 S | R 13 E
 S 21 | S 22
 S 28 | S 27
 1912

raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor.
 Land, rough and mountainous, on steep slopes into SE.
 drainage. Surface covered with sandstone boulders and
 considerable sandstone surface rock.

Very little soil of disintegrated sandstone; of no value
 for agriculture and affords little grazing.

Timber, scrub cedar and pinon; undergrowth, Brigham and
 arrow brush.

Oct. 22, 1912: At 8h 50m a.m., l.m.t., I set off 38° 53'
 N. on the lat. arc, and 11° 04' S. on the decl. arc, and
 determine a meridian with the solar, at the cor. of secs.
 21, 22, 27 and 28. Thence I run
 N. 0° 01' W. bet. secs. 21 and 22; descending over rough,
 mountainous land, heavily timbered with scrub cedar and
 pinon timber, and covered with scattering undergrowth of
 Brigham and arrow brush, along N. slope of rock point.

6.00 Dry canon, about 60 ft. deep, course SE.; ascend abruptly.

7.50 Ascend less abruptly over broken SE. slope.

40.00 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for $\frac{1}{2}$ sec. cor., with brass cap, mkd.

$\frac{1}{4}$	S 21	S 22
	1912.	

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor.

42.00 Descend gradually over broken NE. slope.

80.00 Set an iron post, 3 ft. long, 2 ins. in diam., only 4 ins. in the ground, on account of underlying rock, surrounded by a mound of stone, $4\frac{1}{2}$ ft. base, $2\frac{1}{2}$ ft. high, for cor. of secs. 15, 16, 21 and 22, with brass cap, mkd.

T 22 S	R 13 E
S 16	S 15
S 21	S 22
.1912	

raise a mound of stone, 3 ft. base, 3 ft. high, W. of cor.

Land, rough and mountainous, on broken SE. slopes in $S.\frac{1}{2}$ mile and broken NE. slopes in $N.\frac{1}{2}$ mile. Surface covered with numerous sandstone boulders, with considerable outcropping sandstone surface rock.

Little soil, of disintegrated sandstone, of poor quality, not suited to agriculture and affords little grazing.

Timber, scrub cedar and pinon; undergrowth, Brigham and arrow brush.

Oct. 31, 1912: At 8h 50m a.m., l.m.t., I set off $38^{\circ} 54'$ N. on the lat. arc, and $14^{\circ} 07'$ S. on the decl. arc, and determine a meridian with the solar, at the cor. of secs. 15, 16, 21 and 22. Thence I run

N. $0^{\circ} 01'$ W. bet. secs. 15 and 16; descending abruptly over rough mountainous land, heavily timbered with scrub cedar and pinon, over rocky N. slope.

8.00 Dry canon, about 100 ft. below cor., course SE.; ascend abruptly over N. wall of canon.

14.00 Top of canon wall, about 80 ft. above bottom, bears NW. and SE.; ascend gradually S. slope.

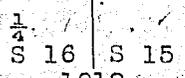
55.00 Foot of mesa, bears NW. and SE.; asc. abruptly SW. slope.

38.00 Edge of mesa, about 40 ft. high, bears NW. and SE.

Thence across mesa, sloping SE.

Chains

40.00 Set an iron post, 3 ft. long, 1 in. in diam., only 4 ins. in the ground, on account of underlying rock, surrounded by a mound of stone, 4 1/2 ft. base, 2 ft. high, for 1/4 sec. cor., with brass cap, mkd.



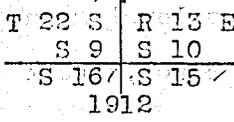
raise a mound of stone, 2 ft. base, 2 ft. high, W. of cor.

44.00 Edge of mesa, bears NW. and SE.; desc. NE. slope.

61.00 Dry canon, about 80 ft. below mesa, course SE.; ascend.

63.00 Point, about 50 ft. high, falls E.; desc. NE. slope.

80.00 Set an iron post, 3 ft. long, 2 ins. in diam., only 6 ins. in the ground, on account of underlying rock, surrounded by a mound of stone, 4 1/2 ft. base, 2 ft. high, for cor. of secs. 9, 10, 15 and 16, with brass cap, mkd.



raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor.

Land, rough and mountainous, on S. slopes in S. 1/2 mile, and NE. slopes in N. 1/2 mile. Surface covered with numerous sandstone boulders, with some surface rock.

Soil, light, fine, dry, warm, sandy loam, rich in lime, of good quality, but very shallow on mesa. Remainder of mile, disintegrated sandstone of poor quality and very shallow.

Not suited to agriculture, on account of shallowness.

Some grazing throughout the mile.

Timber, scrub cedar and pinon. A little undergrowth of shadscale and Brigham brush.

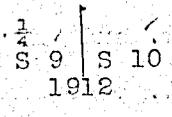
Nov. 1, 1912: deflecting from a solar line carried up to this point yesterday, from the cor. of secs. 9, 10, 15 and 16, I run

N. 0° 01' W. bet. secs. 9 and 10; descending abruptly over rough mountainous land, heavily timbered with scrub cedar and pinon, with little undergrowth of shadscale and Brigham brush, over N. slope.

1.50 Bottom of dry canon, about 40 ft. below cor., course SE. abruptly Steep SW. slope, over surface rock.

9.00 Top of N. wall of canon, bears NW. and SE.; desc. very gradually NE. slope.

40.00 Set an iron post, 3 ft. long, 1 in. in diam., only 18 ins. in the ground, on account of underlying rock, supported by a mound of stone, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.



raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high, W. of cor.

44.00 Small, dry gulch, course E.; asc. gradually over broken SE. slope.

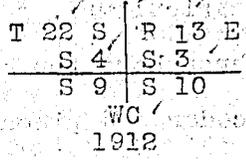
63.00 Foot of mesa, bears E. and W.; asc. abruptly S. slope.

70.00 Edge of mesa, about 80 ft. high, bears E. and W. Thence across level mesa, through scattering timber.

77.50 Narrow, dry canon, about 80 ft. deep, course NE.; ascend abruptly.

80.00 Point for cor. falls on very steep SE. slope, where it would be liable to destruction from slide. I therefore perpetuate this cor. as follows; cor. not set.

81.50 Set an iron post, 3 ft. long, 2 ins. in diam., only 14 ins. in the ground, on account of underlying rock, supported by a mound of stone, 3 ft. base, 1 ft. high, for witness cor. to cor. of secs. 3, 4, 9 and 10, with brass cap, mkd.



raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor. Land, rough and mountainous, on broken NE. and SE. slopes. Surface covered with numerous sandstone and limestone boulders, the mesa being capped with a limestone ledge about 6 ft. in thickness.

Soil, light, fine, dry, warm, sandy loam, rich in lime, 6 to 30 ins. deep, on bedrock, suited to cultivation if watered; and affords considerable grazing.

Survey of the Subdivisional Lines of Tp.22 S., R.13 E.

Chains.

Timber, scrub cedar and pinon; undergrowth, shadscale, salt sage and Brigham brush.

From true point for cor. of secs. 3, 4, 9, and 10, I run N. 89° 59' E. on true line bet. secs. 3 and 10, Descending abruptly over rough, mountainous land, covered with scattering cedar and pinon timber and scattering undergrowth of shadscale and salt sage; over steep SE. slope.

11.10 Dry gulch, about 100 ft. below cor., course NE.

Ascend abruptly over NW. slope.

13.10 Point, about 70 ft. high, falls NE.

Descend abruptly over NE. slope.

20.00 Descend gradually over rolling mountainous land, sloping gently to the N.

40.00 Set an iron post 3 ft. long, 1 in. in dia., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap mkd.

$$\begin{array}{r} \frac{1}{4} S 3 \\ S 10 \\ 1912 \end{array}$$

raise a mound of stone, 3 ft. base, 2 ft. high N. of cor.

80.00 Set an iron post 3 ft. long, 2 ins. in dia., 24 ins. in the ground, for cor. of secs. 2, 3, 10, and 11, with brass cap mkd.

$$\begin{array}{r|l} T 22 S & R 13 E \\ S 3 & S 2 \\ S 10 & S 11 \\ 1912 & \end{array}$$

raise a mound of stone, 2 ft. base, 2 ft. high W. of cor.

Land, rough and rolling mountainous, on steep N. and E.

slopes in E. $\frac{1}{4}$ mile, and gentle N. slopes in E. $\frac{3}{4}$ mile.

Soil, light, fine, dry, warm, sandy loam, of good texture,

8 to 30 ins. deep, on clay subsoil; suited to cultivation, if watered; and affording good grazing.

Timber, scattering scrub cedar and pinon; undergrowth scattering shadscale and salt sage.

Knowing that a closing corner will be necessary against the N. bdy., I run

Chains.

N.0° 01'W.on a true line bet.secs.2 and 3,

Descending gradually over rolling mountainous land, covered with scattering scrub cedar and pinon timber, and scattering undergrowth of shadscale and salt sage, over gentle N.slope.

19.50 Edge of canon, bears E. and W. Descend over rock wall of canon. The sides of this canon are so precipitous that it is impossible to chain across it; therefore at this point I lay off a base S.89°59'W.12.00 chs.in length. I now set a flag on line on the N.side of the canon. From the W.end of my base this flag bears N.44°59'E., making an angle with the base of 45°; tan.45°, 1.000 x 12.00 chs. equals 12.00; 12.00 chs. plus 19.50 chs., equals 31.50 chs.to flag on N.side of canon.

25.00 Bottom of dry canon, about 125 ft.deep, course E. Ascend very abruptly over N.rock wall of canon.

29.80 Top of N.wall of canon; asc.very gradually.

31.50 Flag used in triangulation.

33.60 Rock spur, about 125 ft.high, falls SE. Desc.abruptly over sandstone ledges.

40.00 Small dry canon, about 70 ft.deep, course SE. Ascend abruptly over sandstone ledges. Point for $\frac{1}{4}$ sec.cor.falls in this canon, where it would be liable to destruction from flood waters. Cor.not set.

42.10 Set an iron post 3 ft.long, 1 in.in dia., only 10 ins. in the ground, on account of underlying rock, supported by a mound of stone 4 ft.base, 2 ft.high for witness $\frac{1}{4}$ sec.cor., with brass cap mkd.

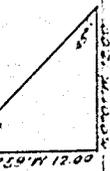


raise a mound of stone, 3 ft.base, 3 ft.high W.of cor.

Ascend gradually SW.slope. Leave timber.

54.00 Asc.very abruptly SW.slope.

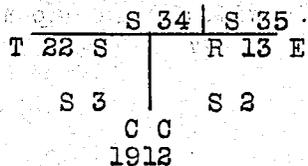
56.00 Top of very narrow ridge, about 100 ft.above $\frac{1}{4}$ sec.cor. capped by a sandstone ledge, 25 ft.high, bears NW.& SE.



Chains.

- 58.00 Descend very abruptly over NE. slope.
- 68.80 Foot of ridge. Thence across wide hollow, draining SE.
- 71.00 Ascend very abruptly over SE. slope.
- 81.56 Edge of mesa, bears E. and SW. Thence across rolling mesa sloping gently to the N.
- Intersect N. bdy. of Tp., 54 lks. S. $89^{\circ} 41' W.$ of the point for cor. of secs. 2, 3, 34, and 35, as determined by the random line for N. bdy. of Tp.
- At intersection, set an iron post, 3 ft. long, 2 ins. in dia., 24 ins. in the ground, for closing corner of secs. 2 and 3, with brass cap mkd.

T 21 S



raise a mound of stone 2 ft. base, 2 ft. high S. of cor. Land, rolling mountainous and mesa; broken by some very rough and broken mesa and canon slopes.

Soil, light, fine, dry warm, sandy loam of good texture, well suited to cultivation on the gentler slopes, if watered; and affording excellent grazing.

Timber, scattering scrub cedar and pinon; undergrowth scattering shadscale and salt sage.

Nov. 1, 1912: At apparent noon, at this cor. I set off $14^{\circ} 29' S.$ on the decl. arc; and observe the sun on the meridian the resulting lat. is $38^{\circ} 56.5' N.$

Knowing that a closing corner will be necessary against the N. bdy., I run, from the true point for cor. of secs. 3, 4, 9, and 10,

$N. 0^{\circ} 01' W.$ on true line bet. secs. 3 and 4,

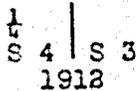
Ascending very abruptly, over rough mountainous land, covered with scattering undergrowth of shadscale and salt sage.

1.50 Witness cor. to cor. of secs. 3, 4, 9, and 10. Corner stands on

Chains.

top of spur of mesa, falling E. Thence across spur of mesa, nearly level.

- 3.80 Descend very abruptly over N. slope.
- 7.00 Dry gulch, about 150 ft. deep, course N. 70° E. Asc. abruptly.
- 12.80 Edge of mesa, bears N. 70° E. and S. 70° W. Thence across mesa, sloping gently E.
- 24.00 Edge of mesa, bears E. and W. Desc. abruptly over N. slope.
- 27.00 Dry gulch, about 50 ft. deep, course N. 60° E. Ascend abruptly over S. slope.
- 30.00 Edge of mesa, about 60 ft. above gulch, bears N. 60° E. and S. 60° W. Thence across rolling mesa, sloping gently to N.
- 43.00 Set an iron post, 3 ft. long, 1 in. in dia., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap mkd.

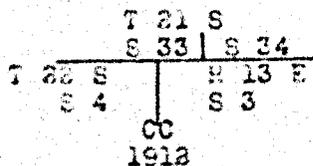


raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high W. of cor.

- 48.50 Top of sandstone ledge, 50 ft. high, at edge of mesa, bears NW. and SW. Desc. very abruptly NW. slope.
- 59.00 Foot of mesa, bears N. 10° E. and SW. Descend gradually along W. slope.

21.16 Intersect N. bdy. of Tp. 54 lks. S. 69° 41' W. of point for cor of secs. 3, 4, 33, and 34, as determined by the random line for the N. bdy.

At intersection set an iron post, 3 ft. long, 2 ins. in dia. on solid rock, surrounded by a mound of stone, 4 $\frac{1}{2}$ ft. base, 3 ft. high for closing corner of sections 3 and 4 with brass cap



raise a mound of stone, 4 ft. base, 4 ft. high S of cor. Land, rolling mesa, broken by very abrupt slopes of mesa. Surface covered with numerous sandstone boulders.

Soil, light, fine, dry, warm, sandy loam, rich in lime, of good texture and suited to cultivation if watered. Good grazing throughout the mile. No timber; undergrowth scattering albacals and salt sage.

Chains

- Oct. 17, 1912: At 9h 40m a.m., l.m.t., I set off 38° 32' N. on the lat. arc, and 9° 16' S. on the decl. arc, and determine a meridian with the solar, at the cor. of secs. 4, 5, 32 and 33, on S. bdy. of Tp., heretofore described. Thence I run N. 0° 02' W. bet. secs. 32 and 33; descending abruptly over rough mountainous land, covered with scattering undergrowth of shadscale and salt sage.
- 0.80 Bottom of dry canon, course NE.; ascend abruptly over sandstone ledges.
about 80 ft. above canon,
- 5.50 Edge of mesa, bears NE. and NW. Enter heavy cedar and pinon timber. Thence across rolling mesa.
- 29.00 Edge of mesa, bears E. and W.; desc. abruptly NE. slope.
- 35.00 Dry canon, about 150 ft. deep, course NE.; asc. abruptly
- 40.00 Set an iron post, 3 ft. long, 1 in. in diam., only 8 ins. in the ground, on account of underlying rock, surrounded by a mound of stone, 4½ ft. base, 2 ft. high, for ¼ sec. cor., with brass cap, mkd.
- | | | |
|------|------|------|
| 1/4 | S 32 | S 33 |
| 1912 | | |
- raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor. Corner stands on top of spur about 50 ft. high, falling NE.; descend abruptly.
- 43.00 Dry canon, about 50 ft. below ¼ sec. cor., course NE.; ascend very abruptly.
- 50.00 Point, about 200 ft. high, falls E.; descend abruptly.
- 56.00 Dry canon, about 100 ft. deep, course SE.; ascend S. slope.
- 65.00 Point, about 100 ft. high, falls E. Thence across hollow, draining E.
- 76.00 Point, falls E.; desc. very abruptly N. slope.
- 80.00 Set an iron post, 3 ft. long, 2 ins. in diam., only 10 ins. in the ground, on account of underlying rock, surrounded by a mound of stone, 4½ ft. base, 2 ft. high, for cor. of secs. 28, 29, 32 and 33, with brass cap, mkd.

T 20 S	R 15 E
S 29	S 28
S 32	S 33
1912	

raise a mound of stone, 3 ft. base, 3 ft. high, W. of cor. Land, rolling mesa bet. sta. 5.50 and 29.00 chs.; remainder of mile, rough and mountainous on very steep slopes into canons draining generally E. Surface covered with numerous sandstone boulders, with considerable surface sandstone. Soil, on the mesa, light, fine, dry, warm, sandy loam, 6 to 18 ins. deep, on clay subsoil, suited to cultivation if watered, and affording excellent grazing. In the remainder of the mile, the soil is a very shallow disintegrated sandstone of poor quality, and in many places there is nothing but the bare rock. Not suited to agriculture or grazing. Timber, scrub cedar and pinon; undergrowth, scattering shadscale and salt sage.

Oct. 17, 1912: At this cor, at app. noon, I set off $9^{\circ} 19'$ S. on the decl. arc, and observe the sun on the meridian. The resulting lat. is $38^{\circ} 52'$ N.

Oct. 19, 1912: deflecting from a solar line carried up to the cor. of secs. 28, 29, 32 and 33, yesterday, I run N. $89^{\circ} 59'$ E. on random line bet. secs. 32 and 33.

40.00 Set temp. $\frac{1}{4}$ sec. cor.

79.90 Intersect N. and S. line, 5 lks. N. of cor. of secs. 27, 28, 32 and 34. Thence I run N. $89^{\circ} 59'$ W. on true line bet. secs. 28 and 33; ascending over rough mountainous land, heavily timbered with scrub cedar and pinon, over rocky NE. slope.

14.10 Ridge, about 125 ft. above cor., bears NW. and SE.; descend W. slope.

22.00 Dry canon, about 150 ft. deep, course SE.; ascend NE. slope

39.90 Ridge, about 175 ft. high, bears NW. and SE.; descend gradually SW. slope.

39.95 Set an iron post, 3 ft. long, 1 in. in diam., only 10 ins. in the ground, on account of underlying rock, surrounded by a mound of stone, $4\frac{1}{2}$ ft. base, 2 ft. high, for $\frac{1}{4}$ sec.

Chains

cor., with brass cap, mkd.

$\frac{1}{4}$ S 28
 $\frac{3}{3}$ 33
 1912

raise a mound of stone, 2 ft. base, 1½ ft. high, N. of cor.

55.00 Small, dry gulch, about 70 ft. below $\frac{1}{4}$ sec. cor., course S.; ascend gradually.

62.00 Spur, falls SE.; descend very abruptly over sandstone ledges.

73.20 Dry canon, about 150 ft. deep, course SE.; ascend very abruptly over S. wall of canon.

77.50 Flat topped sandstone knob, about 75 ft. high, on top of spur, about 125 ft. above canon, falling N.; descend abruptly along steep N. slope.

79.90 The cor. of secs. 28, 29, 32 and 33.

Land, rough and mountainous on very steep, rocky slopes into canons draining S. and SE.

Surface covered with numerous sandstone boulders with considerable outcropping surface rock.

Soil, very shallow disintegrated sandstone of poor quality, of no value for agriculture and affording little grazing. Timber, scrub cedar and pinon; a very little undergrowth of shadscale and Brigham brush.

Oct. 19, 1912.

Oct. 18, 1912: At 8h a.m., l.m.t., I set off 38° 52' N. on the lat. arc, and 9° 36' S. on the decl. arc, and determine a meridian with the solar, at the cor. of secs. 28, 29, 32 and 33. Thence I run

N. 0° 02' W. bet. secs. 28 and 29; descending abruptly over rough mountainous land, heavily timbered with scrub cedar and pinon, and covered with scattering undergrowth of shadscale and Brigham brush, over steep, rocky N. slope.

5.00 Dry canon, about 120 ft. below cor., course E.; ascend abruptly over sandstone ledges.

10.00 Top of canon, about 150 ft. above bottom, bears E. and W. Ascend very gradually over gentle SW. slope.

- 22.00 Descend very gradually gentle NE. slope.
 30.00 Descend abruptly over rocky NE. slope.
 40.00 Set an iron post, 3 ft. long, 1 in. in diam., on surface rock, surrounded by a mound of stone, $4\frac{1}{2}$ ft. base, $2\frac{1}{2}$ ft. high, for $\frac{1}{2}$ sec. cor., with brass cap; mkd.

$\frac{1}{4}$
 S 29 | S 28
 1912

- raise a mound of stone, 3 ft. base, 3 ft. high, W. of cor.
 40.50 Dry canon, about 100 ft. deep, course SE.; asc. abruptly.
 48.00 Top of canon wall, bears W. and SE.; ascend gradually.
 60.00 Low spur, falls NE.; descend gradually N. slope.
 80.00 Set an iron post, 3 ft. long, 2 ins. in diam., only 6 ins. in the ground, on account of underlying rock, surrounded by a mound of stone, $4\frac{1}{2}$ ft. base, 2 ft. high, for cor. of secs. 20, 21, 28 and 29, with brass cap; mkd.

T 22 S | R 13 E
 S 20 | S 21
 S 29 | S 28
 1912

raise a mound of stone, 3 ft. base, 3 ft. high, W. of cor.
 Land, rolling mountainous, cut by two very steep and rough canons; Surface covered with numerous sandstone and limestone boulders, with considerable sandstone surface rock. General E. exposure.

Soil, light, fine, dry, warm, sandy loam, very shallow on bedrock of sandstone or limestone. Not suited to agriculture on account of shallowness. Considerable grazing on the gentler slopes.

Timber, scrub cedar and pinon; undergrowth, shadscale and Brigham brush.

Oct. 21, 1912: from the cor. of secs. 20, 21, 28 and 29, I run S. $89^{\circ} 59'$ E. on random line bet. secs. 21 and 28.

- 40.00 Set temp. $\frac{1}{2}$ sec. cor.
 79.84 Intersect N. and S. line 7 lks. S. of cor. of secs. 21, 22, 27 and 28. Then, deflecting from a solar line carried up from the S. this a.m., I run

Chains

	S. 89° 58' W. on true line bet. secs. 21 and 28; over mountainous land, heavily timbered with scrub cedar and pinon, and covered with scattering undergrowth of shadscale and Brigham brush, along S. slope of ridge.
6.00	Ascend gradually SE. slope.
17.00	Low ridge, bears NE. and SW.; desc. NW. slope.
20.00	Head of small, dry gulch, course NE.; ascend gradually.
25.00	Low point, falls NE.; desc. gradually along N. slope.
39.00	Dry gulch, course S. 20° E.; ascend.
39.92	Set an iron post, 3 ft. long, 2 ins. in diam., on surface rock, surrounded by a mound of stone, 4½ ft. base, 2½ ft. high, for ¼ sec. cor., with brass cap, mkd.
	$\frac{1}{4} \text{ S. } 21$ $\text{S } 28 \checkmark$
	raise a mound of stone, 3 ft. base, 2 ft. high, N. of cor.
	Ascend more abruptly over solid rock point.
44.00	Rock point, about 70 ft. above ¼ sec. cor., falls S.; descend abruptly.
50.00	Dry canon, about 70 ft. below point; course SE.; ascend abruptly NE. slope, over sandstone ledges.
61.00	Point of mesa, about 125 ft. above canon, falls N.; descend gradually.
67.00	Head of small, dry gulch; course NE.; ascend gradually along gentle N. slope.
79.84	The cor. of secs. 20, 21, 28 and 29.
	Land, mountainous, on moderate slopes in E. ½ mile, with some very abrupt rock slopes into canons in W. ½ mile, and rolling mesa land in W. ¼ mile.
	Surface covered with numerous sandstone boulders, with considerable outcropping surface sandstone.
	Soil, in W. ¼ mile, light, fine, dry, warm, sandy loam of good texture, but too shallow to admit of cultivation.
	Remainder of mile consists of very shallow disintegrated sandstone of poor quality and not suited to agriculture.
	The entire mile affords some grazing.

Timber, scrub cedar and pinon; undergrowth, scattering
shadscale and Brighambrush, with patches of salt sage.

N. 0° 02' W. bet. secs. 20 and 21; descending gradually
over mountainous land, heavily timbered with scrub cedar
and pinon and covered with scattering undergrowth of
shadscale, salt sage and Brighambrush.

2.00 Descend very abruptly over rocky N. slope.

7.00 Dry canon, about 150 ft. deep, course E.; ascend abruptly
over N. wall of canon.

15.00 Edge of mesa, about 150 ft. above canon, bears E. and W.
Thence across mesa sloping gently to the E.

26.00 Edge of mesa, bears NW. and SE.; desc. abruptly N. slope.

30.00 Dry ganon, about 60 ft. deep, course SE.; ascend abruptly.

35.00 Ascend less abruptly S. slope.

40.00 Set an iron post, 3 ft. long, 1 in. in diam.; only 10 ins.
in the ground, on account of underlying rock, surrounded
by a mound of stone, 4 1/2 ft. base, 2 ft. high; for 1/2 sec.
cor., with brass cap, mkd.

1/4	S 20	S 21
1912		

raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor.

42.00 Point, about .50 ft. high, falls SE.; descend.

55.00 Dry canon, about 100 ft. deep, course SE.; asc. abruptly.

65.00 Edge of mesa, about 100 ft. above canon, bears NW. and
SE. Thence across broken mesa,

80.00 Set an iron post, 3 ft. long, 2 ins. in diam.; on surface
rock, surrounded by a mound of stone, 4 1/2 ft. base, 2 1/2 ft.
high, for cor. of secs. 16, 17, 20 and 21, with brass cap,
marked

T 22 S	R 13 E
S 17	S 16
S 20	S 21
1912	

raise a mound of stone, 3 ft. base, 3 ft. high, W. of cor.

Cor. stands at edge of mesa, bearing NE. and SW.

Land, mountainous and rolling mesa. Surface covered with

Chains

numerous sandstone boulders, with considerable outcropping surface sandstone and limestone.

Soil, on the mesas, light, fine, dry, warm, sandy loam, rich in lime, 8 to 18 ins. deep on clay subsoil, suited to cultivation if watered. The remainder of the mile has practically no soil, but affords some grazing. The mesas afford excellent grazing.

Timber, scrub cedar and pinon; undergrowth, scattering shadscale, salt sage and Brigham brush.

Instrument in transit at noon preventing lat. obsn.
Oct. 21, 1912.

Oct. 22, 1912, from the cor. of secs. 16, 17, 20 and 21, I run N. 89° 58' E. on random line bet. secs. 16 and 21.

40.00 Set temp. $\frac{1}{4}$ sec. cor.

79.92 Intersect N. and S. line 12 lks. N. of cor. of secs. 15, 16, 21 and 22. Here, deflecting from a solar line carried up to this point this a.m., I run

N. 89° 57' W. on true line bet. secs. 16 and 21; ascending gradually over rolling mountainous land, heavily timbered with scrub cedar and pinon, and covered with scattering undergrowth of shadscale and salt sage, along N. slope.

15.00 Low point, falls N. 20° W.; desc. gradually NW. slope.

23.00 Small, dry gulch, course N. 30° W.; asc. gradually.

32.96 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.

$\frac{1}{4}$ S 16
S 21
1912

raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high, N. of cor. Descend gradually along NW. slope.

48.00 Head of small, dry gulch, course NE.; ascend gradually.

70.00 Edge of mesa, about 80 ft. above gulch, bears NE. and SW. Thence across mesa.

79.92 The cor. of secs. 16, 17, 20 and 21.

Land, rolling mountainous, on gentle slopes to the N; general N. exposure.

Soil, light, fine, dry, warm, sandy loam, rich in lime, 6 to 20 ins. deep on clay subsoil, suited to cultivation, if watered, and affords excellent grazing.

Timber, scrub cedar and pinon; undergrowth, scattering shadscale and salt sage.

Oct. 22:

The instrument being in transit at noon prevented obsn. for latitude.

Oct. 29, 1912: At 8h 15m a.m., l.n.t., I set off $38^{\circ} 54'$ N. on the lat. arc, and $13^{\circ} 26'$ S. on the decl. arc, and determine a meridian with the solar, at the cor. of secs. 16, 17, 20 and 21. Thence I run

N. $0^{\circ} 02'$ W. bet. secs. 16 and 17; descending gradually over rolling mountainous land, heavily timbered with scrub cedar and pinon, and covered with scattering undergrowth of shadscale and salt sage, over gentle NW. slope.

32.00 Descend abruptly NE. slope, over sandstone ledges.

38.50 Dry canon, about 250 ft. below sec. cor., course SE.; ascend abruptly SW. slope.

40.00 Set an iron post, 3 ft. long, 1 in. in diam., only 8 ins. in the ground, on account of underlying rock, surrounded by a mound of stone, $4\frac{1}{2}$ ft. base, 2 ft. high, for $\frac{1}{4}$ sec. cor. bet. secs. 16 and 17, with brass cap, mkd.

	$\frac{1}{4}$	
S 17	|	S 16
1912		

raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor.

53.00 Top of canon wall, about 100 ft. above bottom, bears NW. and SE. Ascend gradually over rolling SE. slope.

60.00 Set an iron post, 3 ft. long, 2 ins. in diam., 24 ins. in the ground, for cor. of secs. 8, 9, 16 and 17, with brass cap, mkd.

T 22 S	|	R 13 E
S 8	|	S 9
S 17	|	S 16
1912		

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor.

Chains

Land, rolling mountainous on gentle slopes to walls of canon at 38.50 chs., and rough mountainous slopes of canon walls.

Surface covered with numerous sandstone boulders with outcropping sandstone on canon walls.

Soil, on gentler slopes, light, fine, dry, warm, sandy loam of good texture, suited to cultivation if watered and affords excellent grazing.

Timber, scrub cedar and pinon; undergrowth, scattering shadscale and salt sage.

Oct. 31, 1912, from the cor. of secs. 8, 9, 16 and 17, I run S. 89° 57' E. on random line bet. secs. 9 and 16.

40.00 Set temp. $\frac{1}{4}$ sec. cor.

79.92 Intersect N. and S. line 5 lks. S. of cor. of secs. 9, 10, 15 and 16. Here, deflecting from a solar line carried up from the S. this a.m., I run

N. 89° 59' W. on true line bet. secs. 9 and 16; ascending over rolling mountainous land, heavily timbered with cedar and pinon timber, and covered with scattering undergrowth of shadscale and salt sage.

16.00 Descend gradually NW. slope.

25.00 Small, dry gulch, course NE.; ascend gradually along gentle N. slope.

39.96 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.

$\frac{1}{4}$ S 9
 S 16
 1912

raise a mound of stone, 3 ft. base, 2 ft. high, N. of cor.

60.00 Ascend gradually E. slope.

77.00 Ascend more abruptly E. slope of knoll.

79.92 The cor. of secs. 8, 9, 16 and 17.

Land, rolling mountainous, on gentle N. and E. slopes.

Surface covered with numerous sandstone boulders.

Soil, light, fine, dry, warm, sandy loam of good texture,

suited to cultivation if watered, and affording excellent grazing. Timber, scrub cedar and pinon; undergrowth, scattering shadscale and salt sage.

Oct. 31, 1912: At app. noon, I set off $14^{\circ} 10'$ S. on the decl. arc, and observe the sun on the meridian, at the cor. of secs. 8, 9, 16 and 17. The resulting lat. is $39^{\circ} 55'$ N. Thence I run N. $0^{\circ} 02'$ W. bet. secs. 8 and 9; descending gradually over rolling mountainous land, heavily timbered with scrub cedar and pinon, and covered with scattering undergrowth of shadscale and salt sage.

20.80 Descend over perpendicular sandstone ledge, 50 ft. high, bearing E. and W.

38.60 Edge of canon, bears E. and W.; desc. very abruptly.

40.00 Set an iron post, 3 ft. long, 1 in. in diam., on surface rock, surrounded by a mound of stone, $4\frac{1}{2}$ ft. base, $2\frac{1}{2}$ ft. high, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.

$\frac{1}{4}$ S 8 S 9

1912

raise a mound of stone, 3 ft. base, 3 ft. high, W. of cor.

40.30 Dry canon, about 60 ft. deep, course E.; ascend abruptly.

44.00 Rocky point, about 50 ft. high, falls E.; desc. abruptly.

49.00 Small, dry gulch, course NE.; ascend abruptly.

51.00 Ascend very gradually over gentle E. slope.

80.00 Set an iron post, 3 ft. long, 2 ins. in diam., 24 ins. in the ground, for cor. of secs. 4, 5, 8 and 9, with brass cap, mkd.

T 22 S R 13 E
S 5 S 4

1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor.

Land, rolling mountainous, on gentle N. and E. slopes.

Surface covered with numerous sandstone and limestone boulders, with outcropping sandstone on canon walls.

Chains

Soil, light, fine, dry, warm, sandy loam, 8 to 24 ins. deep, on clay subsoil, suited to cultivation if watered, and affords excellent grazing.
 Timber, scrub cedar and pinon; undergrowth, scattering shadscale and salt sage.

Nov. 1, 1912, from the cor. of secs. 4, 5, 8 and 9, I run S. 89° 59' E. on random line bet. secs. 4 and 9.

- 40.00 Set temp. $\frac{1}{4}$ sec. cor.
 - 80.00 Intersect N. and S. line, 5 lks. N. of true point for cor. of secs. 3, 4, 9 and 10. Here, deflecting from a solar line carried up from the S., I run N. 89° 57' W. on true line bet. secs. 4 and 9; ascending abruptly over steep SE. slope, through considerable undergrowth of shadscale and salt sage.
 - 2.10 Edge of mesa, bears NE. and SW.; ascend gradually over rolling mesa, sloping NE.
 - 29.40 Edge of mesa, bears NE. and SW.; desc. abruptly over sandstone ledge, 50 ft. high.
 - 33.00 Descend gradually W. slope.
 - 40.00 Set an iron post, 3 ft. long, 1 in. in diam., only 10 ins. in the ground, on account of underlying rock, supported by a mound of stone, 4 ft. base, 2 ft. high, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.
- $$\begin{array}{r} \frac{1}{4} S 4 \\ \hline S 9 \\ 1912 \end{array}$$
- raise a mound of stone, 3 ft. base, 3 ft. high, N. of cor.
 - Enter heavy cedar and pinon timber, bears N. and S.
 - 53.00 Edge of canon, bears NE. and SW.; desc. very abruptly.
 - 54.00 Dry canon, about 100 ft. deep, about 225 ft. below mesa, course NE.; asc. abruptly W. wall of canon.
 - 54.20 Top of canon, bears NE. and SW.; asc. gradually E. slope.
 - 80.00 The cor. of secs. 4, 5, 8 and 9. ✓
 Land, rolling mountainous and mesa, on gentle E. and W. slopes, with exception of canon and mesa walls, which are on quite steep slopes.
 Surface covered with numerous sandstone boulders, with

outcropping sandstone on the canon walls.

Soil, light, fine, dry, warm, sandy loam of good texture, 6 to 16 ins. deep, on clay subsoil, suited to cultivation if watered and affords excellent grazing.

Timber, scrub cedar and pinon; undergrowth, shadscale and salt sage.

Instrument in transit at noon prevents lat. obsn. Clouds obscure sun during a.m. and p.m. hours, preventing solar obsns.

Nov. 1, 1912.

Nov. 2, 1912: At the cor. of secs. 4, 5, 8 and 9,

deflecting from a solar line carried up from the S.

yesterday morning, I run

N. $0^{\circ} 02'$ W. on random line bet. secs. 4 and 5.

40.00 Set temp. $\frac{1}{4}$ sec. cor.

80.72 Intersect N. bdy. of Tp. 38 lks. W. of cor. of secs.

4, 5, 32 and 33, heretofore described. Thence I run

S. $0^{\circ} 14'$ W. on true line bet. secs. 4 and 5; descending

very gradually over rolling mountainous land, covered with

scattering timber and considerable undergrowth of

shadscale and salt sage.

5.50 Small, dry gulch, course SE.; ascend gradually NE. slope.

18.50 Low point, falls SE.; desc. abruptly over rocky N. wall of canon.

29.40 Dry canon, about 150 ft. deep, course SE.; ascend abruptly over rocky S. wall of canon.

33.80 Top of canon wall, about 130 ft. above bottom, bears NW. and SE. Ascend gradually over gentle NE. slope.

40.72 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.

$\frac{1}{4}$ |
S 5 | S 4
1912

raise a mound of stone, 2 ft. base, $1\frac{1}{2}$ ft. high, W. of cor.

53.00 Point or spur of mesa, about 50 ft. above $\frac{1}{4}$ sec. cor.; falls E.; descend.

57.50 Small, dry canon, course SE. Thence along E. slope.

80.72 The cor. of secs. 4, 5, 8 and 9.

Chains

Land, rolling mountainous, on gentle E. slopes, with exception of rough, rocky, steep slopes of canon walls at 29.40.chs.

Surface covered with some sandstone boulders, with outcropping sandstone on canon walls.

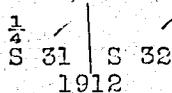
Soil, light, fine, dry, warm, sandy loam, of good texture, 8 to 14 ins. deep, on clay subsoil, suited to cultivation if watered, and affords excellent grazing.

Timber, scrub cedar and pinon; undergrowth, shadscale and salt sage.

Nov. 2, 1912.

Oct. 16, 1912: At 2h p.m., 1.m.t., I set off $38^{\circ} 51'$ N. on the lat. arc, and $8^{\circ} 59'$ S. on the decl. arc, and determine a meridian with the solar, at the cor. of secs. 5, 6, 31 and 32, on S. bdy. of Tp., heretofore described. Thence I run N. $0^{\circ} 03'$ W. bet. secs. 31 and 32; descending abruptly over rolling mountainous land, covered with considerable undergrowth of shadscale and salt sage, over N. slope of knoll.

- 6.00 Foot of knoll, about 150 ft. below sec. cor.; descend very gradually gentle N. slope.
- 35.00 Ascend very gradually, gentle S. slope.
- 40.00 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.



dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., and raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high, W. of cor.

- 56.20 Foot of mesa, bears N. 60° W. and S. 60° E.; ascend abruptly SW. slope.
- 61.40 Edge of mesa, about 180 ft. high, bears N. 60° W. and S. 60° E. Thence across rolling mesa; enter scattering cedar and pinon timber.

- 66.90 Edge of mesa, bears NW. and SE.; desc. abruptly NE. slope.
- 75.00 Foot of mesa, about 180 ft. below top, bears NW. and SE.
Descend very gradually, gentle NE. slope.
- 80.00 Set an iron post, 3 ft. long, 2 ins. in diam., 24 ins. in the ground, for cor. of secs. 29, 30, 31 and 32, with brass cap, mkd.

T 22 S	R 13 E
S 30'	S 29'
S 31'	S 32'
1912	

raise a mound of stone, 2 ft. base, 1½ ft. high, W. of cor. Land, rolling mountainous on quite gentle slopes, with exception of the steep slopes of mesa breaks.

Surface smooth and free from rock except on steep slopes of mesas, where there are numerous sandstone boulders.

Soil, light, fine, dry, warm, sandy loam of good texture, well suited to cultivation if watered, and affording excellent grazing.

Timber, scrub cedar and pinon; undergrowth, shadscale and salt sage.

- Oct. 17, 1912, from the cor. of secs. 29, 30, 31 and 32
I run N. 89° 59' E. on random line bet. secs. 29 and 32.
- 40.00 Set temp. ¼ sec. cor.
- 79.98 Intersect N. and S. line 9 lks. S. of cor. of secs. 28, 29, 32 and 33.

Oct. 17, 1912: Here at app. noon, I set off 9° 19' S. on the decl. arc, and observe the sun on the meridian. The resulting lat. is 38° 52' N. Thence I run S. 89° 55' W. on true line bet. secs. 29 and 32; descending over rough mountainous land, covered with scattering undergrowth of shadscale and salt sage, along steep N. slope.

- 11700 Small, dry gulch, course NE.; asc. more gradually along NE. slope.
- 33.00 Ascend very gradually gentle NE. slope, over rolling mountainous land, through considerable undergrowth of shadscale and salt sage.

Chains

- 39.99 ✓ Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for $\frac{1}{2}$ sec. cor., with brass cap, mkd.

$$\begin{array}{r} \frac{1}{2} S 29 \\ S 32 \\ 1912 \end{array}$$
- 79.98 ✓ raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high, N. of cor. The cor. of secs. 29, 30, 31 and 32.
 Land, rough and mountainous on steep, rocky, N. and NE. slopes in E. 33.00 chs., and rolling mountainous on gentle NE. slope in W. 46.98 chs. Surface of rough land covered with sandstone boulders, with considerable outcropping sandstone and surface rock.
 Soil, on the gentler slopes, light, fine, dry, warm, sandy loam of good texture, 8 to 20 ins. deep on clay subsoil, suited to cultivation if watered. Soil in remainder of mile, very shallow disintegrated sandstone of poor quality, not suited to cultivation. Good grazing throughout the mile. No timber; undergrowth, shadscale and salt sage.

- 40.00 S. 89° 59' W. on random line bet. secs. 30 and 31. Set temp. $\frac{1}{4}$ sec. cor.
- 82.29 Intersect W. bdy. of Tp. at cor. of secs. 25, 30, 31 and 36, heretofore described. Thence I run N. 89° 59' E. on true line bet. secs. 30 and 31; ascending abruptly over rolling mountainous land, covered with scattering cedar and pinon timber and scattering undergrowth of shadscale and salt sage.
- 2.60 Edge of mesa, about 50 ft. above cor., bears N. and S. Thence across rolling mesa, sloping gently to the E.
- 14.50 Enter heavy cedar and pinon timber, bears N. and S.
- 42.29 ✓ Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.

$$\begin{array}{r} \frac{1}{4} S 30 \\ S 31 \\ 1912 \end{array}$$
- 56.10 raise a mound of stone, 2 ft. base, 1 $\frac{1}{2}$ ft. high, N. of cor. Edge of mesa, bears NW. and SE.; desc. abruptly NE. slope, through scattering cedar and pinon timber.

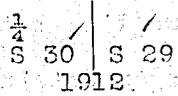
67.50 Foot. of mesa, about 150 ft. below top, bears NW. and SE. Descend gradually over gentle NE. slope.

82.29 The cor. of secs. 29, 30, 31 and 32. ✓
 Land, rolling mountainous on gentle E. and NE. slopes, with abrupt slopes at edges of mesa. Surface covered with some sandstone boulders below mesa, and some limestone boulders on top of mesa.
 Soil, light, fine, dry, warm, sandy loam of good texture, rich in lime on the mesa, suited to cultivation if watered and affording excellent grazing.
 Timber, scrub cedar and pinon; undergrowth, shadscale and salt sage.

Oct. 17, 1912.

Oct. 16, 1912: at the cor. of secs. 29, 30, 31 and 32, deflecting from a solar line carried up from the S. I run N. 0° 03' W. bet. secs. 29 and 30; descending very gradually over rolling mountainous land, covered with considerable undergrowth of shadscale and salt sage, over gentle NE. slope.

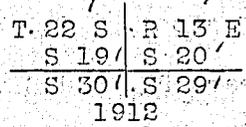
40.00 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for 1/4 sec. cor., with brass cap, mkd.



dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft. dist., and raise a mound of earth, 3 1/2 ft. base, 1 1/2 ft. high, W. of cor.

Enter scattering cedar and pinon timber and ascend gradually gentle S. slope.

30.00 Set an iron post, 3 ft. long, 2 ins. in diam., only 10 ins. in the ground, on account of underlying rock, surrounded by a mound of stone, 4 1/2 ft. base, 2 ft. high, for cor. of secs. 19, 20, 29 and 30, with brass cap, mkd.



Chains

raise a mound of stone, 3 ft. base, 2 ft. high, W. of cor. Land, rolling mountainous, on gentle NE. and S. slopes. Surface of N. $\frac{1}{2}$ mile covered with numerous sandstone boulders. Soil, in S. $\frac{3}{4}$ mile, light, fine, dry, warm, sandy loam, of good texture, 8 to 20 ins. deep, on clay subsoil, suited to cultivation if watered. In the N. $\frac{1}{4}$ mile the soil is of the same quality but is only from 6 to 12 ins. deep, and lies on bedrock, is not suited to cultivation on account of its shallowness. The entire mile affords good grazing. General E. exposure. Timber, scrub cedar and pinon; undergrowth, shadscale and salt sage.

- Oct. 18, 1912, from the cor. of secs. 19, 20, 29 and 30, I run N. $89^{\circ} 55'$ E. on random line bet. secs. 20 and 29.
- 40.00 Set temp. $\frac{1}{4}$ sec. cor.
- 80.10 Intersect N. and S. line 2 lks. S. of cor. of secs. 20, 21, 28 and 29. Deflecting from a solar line carried up from the S. this am., I run S. $89^{\circ} 54'$ W. on true line bet. secs. 20 and 29; over rough mountainous land, heavily timbered with scrub cedar and pinon.
- 3.00 Descend very abruptly over rocky NW. slope, over sandstone ledges.
- 12.00 Dry canon, about 175 ft. below sec. cor., course NE.; ascend over rock point.
- 32.20 Rock point, about 75 ft. above canon, falls SE.; descend abruptly.
- 40.05 Set an iron post, 3 ft. long, 1 in. in diam., on surface rock, surrounded by a mound of stone, $4\frac{1}{2}$ ft. base, $2\frac{1}{2}$ ft. high, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.
- $$\begin{array}{c} \frac{1}{4} S 20 \\ S 29 \\ 1912 \end{array}$$
- 40.20 raise a mound of stone, 3 ft. base, 3 ft. high, N. of cor. Dry canon, about 50 ft. below point, course SE.; ascend abruptly over sandstone ledges.

- 43.00 Top of canon wall, about 80 ft. above canon; bears NW. and SE.; ascend gradually over rolling S. and SE. slope, through considerable shadscale and salt sage undergrowth.
- 60.10 The cor. of secs. 19, 20, 29 and 30.
- Land, in E. $\frac{1}{2}$ mile, rough and mountainous on steep slopes into dry canon; in W. $\frac{1}{2}$ mile, rolling mountainous on gentle S. and SE. slope.
- Surface in E. $\frac{1}{2}$ mile, broken by much outcropping sandstone.
- Soil, in W. $\frac{1}{2}$ mile, light, fine, dry, warm, sandy loam of good texture, 4 to 10 ins. deep, on bedrock, and is too shallow to permit of cultivation, but affords good grazing. The E. $\frac{1}{2}$ mile is too rough and rocky to be of any value for agriculture or grazing.
- Timber, cedar and pinon; undergrowth, shadscale and salt sage.
-
- Oct. 16, 1912: At the cor. of secs. 19, 20, 29 and 30, I deflect from a solar line carried up from the S. this a.m., and run
- S. $89^{\circ} 59'$ W. on random line bet. secs. 19 and 30.
- 40.00 Set temp. $\frac{1}{4}$ sec. cor.
- 82.25 Intersect W. bdy. of Tp., 18 lks. N. of cor. of secs. 19, 24, 25 and 30, heretofore described. Thence I run N. $89^{\circ} 51'$ E. on true line bet. secs. 19 and 30; descending very gradually over rolling mesa land, heavily timbered with scrub cedar and pinon, and covered with scattering undergrowth of shadscale and salt sage.
- 18.70 Edge of mesa, bears N. and S.; descend abruptly E. slope.
- 23.50 Foot of mesa, about 100 ft. below top, bears N. and S.
- Descend very gradually over rolling land, sloping E. and S.
- 42.25 Set an iron post, 5 ft. long, 1 in. in diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.
- $$\frac{1}{4} \text{ S } 19$$

$$\text{S } 30$$
 1912
- dig pits, 18 x 18 x 12 ins., E. and W. of post, 3 ft. dist., and raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft. high, N. of cor.

Chains

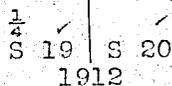
82.25 The cor. of secs. 19, 20, 29 and 30.
 Land, rolling mountainous, on gentle E. and S. slopes,
 with exception of steep E. slope on breaks of mesa.
 Soil, light, fine, dry, warm, sandy loam of good texture,
 rich in lime on the mesa, 8 to 20 ins. deep on clay subsoil,
 in the western portion and gradually growing shallower
 to the E., being about 10 ins. deep on bedrock at the cor.
 of secs. 19, 20, 29 and 30, well suited to cultivation
 if watered; to the W., and affording excellent grazing
 throughout the mile.
 Timber, scrub cedar and pinon; undergrowth, shadscale and
 salt sage.
 Instrument in transit at noon prevents lat. obsn.
 Oct. 16, 1912.

Oct. 18, 1912: At app. noon, at the cor. of secs. 19, 20,
 29 and 30, I set off $9^{\circ} 40.5'$ S. on the decl. arc, and
 observe the sun on the meridian. The resulting lat. is
 $38^{\circ} 55'$ N. Thence I run
 $N. 0^{\circ} 03'$ W. bet. secs. 19 and 20; ascending gradually
 over rolling mountainous land, covered with scattering
 cedar and pinon timber and scattering undergrowth of
 shadscale and salt sage, over gentle S. slope.

10.00 Foot of mesa, bears E. and W.; ascend abruptly S. slope.

19.20 Top of mesa, about 175 ft. above sec. cor., bears E. and
 W., thence across rolling mesa.

40.00 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in
 the ground, for $\frac{1}{4}$ sec. cor. bet. secs. 19 and 20, with
 brass cap, mkd.



dig pits, 18 x 18 x 12 ins., N. and S. of post, 3 ft.
 dist., and raise a mound of earth, $3\frac{1}{2}$ ft. base, $1\frac{1}{2}$ ft.
 high, W. of cor.

42.30 Edge of mesa, bears E. and W.; desc. abruptly N. slope.

- 52.00 Foot of mesa, about 175 ft. below top, bears N. and W.
Descend very gradually over gentle N. slope.
- 30.00 Set an iron post, 3 ft. long, 2 ins. in diam., only 6 ins.
in the ground, on account of underlying rock, surrounded
by a mound of stone, 4½ ft. base, 2 ft. high, for cor. of
secs. 17, 18, 19 and 20, with brass cap, wd.

T 22 S	R 13 E
S 18	S 17
S 19	S 20

1912

raise a mound of stone, 3 ft. base, 3 ft. high, W. of cor.
Land, rolling mountainous on gentle N. and S. slopes,
with exception of the steep N. and S. breaks of mesa.
Surface covered with some sandstone and limestone boulders.
Soil, on mesa, light, fine, dry, warm, sandy loam rich in
lime, 8 to 10 ins. deep, on clay subsoil
and suited to cultivation if
watered. The soil below the mesa is of the same character
but not so rich in lime, and from 6 to 14 ins. deep on
bedrock, not so well suited to cultivation on account
of shallowness. The entire mile affords excellent grazing.
Timber, scrub cedar and pinon; undergrowth, shadscale
and salt sage.

- Oct. 22, 1912, from the cor. of secs. 17, 18, 19 and 20,
I run N. 89° 54' W. on random line bet. secs. 17 and 20.
- 40.00 Set temp. 1 sec. cor.
- 30.00 Intersect N. and S. line at cor. of secs. 16, 17, 20 and
21. Here, deflecting from a solar line carried up from
the S. yesterday, I run
S. 89° 54' W. on true line bet. secs. 17 and 20; descending
over rough mountainous land, covered with scattering
undergrowth of shadscale and salt sage, over NW. slope.
- 9.00 Head of small, dry gulch, course NE. Enter heavy cedar
and pinon timber and ascend over broken N. slope.
- 27.00 Descend over broken NW. slope.
- 40.03 Set an iron post, 5 ft. long, 1 in. in diam., only 8 ins.
in the ground, on account of underlying rock, surrounded

Chains

by a mound of stone, $4\frac{1}{2}$ ft. base, 3 ft. high, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.

$\frac{1}{4}$ S 17
S 20
1912.

raise a mound of stone, 3 ft. base, 3 ft. high, N. of cor.

Corner stands in head of small, dry draw, course NW.

47.00 Dry gulch, course NE.; asc. abruptly.

53.30 Point, about 100 ft. high, falls NE.; desc. abruptly.

57.00 Dry gulch, about 50 ft. deep, course NE.; ascend.

71.00 Ascend very gradually over gentle N. and NE. slope.

80.06 The cor. of secs. 17, 18, 19 and 20.

Land, rough and mountainous on broken N. slopes.

Surface covered with numerous sandstone boulders, with considerable surface sandstone.

Soil, on the gentler slopes, light, fine, dry, warm, sandy loam of good texture, 6 to 10 ins. deep on bedrock, practically no soil on the steeper slopes. Not suited to cultivation on account of shallowness; some grazing throughout the mile.

Timber, scrub cedar and pinon; undergrowth, shadscale and salt sage.

Oct. 22, 1912.

Oct. 18, 1912; at the cor. of secs. 17, 18, 19 and 20, I deflect from a solar line carried up from the S. this p.m., and run S. $89^{\circ} 51'$ W. on random line bet. secs. 18 and 19.

40.00 Set temp. $\frac{1}{4}$ sec. cor.

82.40 Intersect W. bdy. of Tp. 21 lks. S. of cor. of secs.

13, 18, 19 and 24, heretofore described. Thence I run East on true line bet. secs. 18 and 19; descending abruptly over rough mountainous land, covered with scattering scrub cedar and pinon timber, over steep N. slope.

7.40 Dry gulch, about 75 ft. below cor., course NE.; ascend over steep NW. slope.

- 20.30 Descend abruptly over steep NE slope.
- 22.90 Foot of abrupt slope, bears NW. and SE., about 120 ft. below top. Descend gradually over gentle NE. slope.
- 42.40 Set an iron post, 3 ft. long, 1 in. in diam., only 6 ins. in the ground, on account of underlying rock, surrounded by a mound of stone, 4½ ft. base, 2 ft. high, for ¼ sec. cor., with brass cap, mkd.

$\frac{1}{4}$ S 18
 S 19
 1912

- raise a mound of stone, 3 ft. base, 3 ft. high, N. of cor.
- 53.40 Descend abruptly rocky SE. slope.
- 56.90 Dry gulch, about 130 ft. below ¼ sec. cor., course NE.; ascend abruptly rocky NW. slope.
- 67.00 Top of abrupt ascent, about 175 ft. above gulch, bears NE. and SW. Thence over gentle N. and NE. slope.
- 82.40 The cor. of secs. 17, 18, 19 and 20.

Land, rough and mountainous, on steep N. slopes, in W. 30 chs., rolling mountainous, on gentle N. and NE. slopes, with exception of steep rocky slopes into one canon, in E. 52.00 chs. Surface covered with numerous sandstone boulders, with outcropping sandstone ledges on steep slopes into gulch at 56.90.

Soil, in W. 30.00 chs., disintegrated shales of great depth, not suited to cultivation on account of steep slopes. In the remainder of the mile the soil is a light, fine, dry, warm, sandy loam of good texture, but too shallow to permit of cultivation. The entire mile affords good grazing. Timber, scrub cedar and pinon; undergrowth, shadscale and salt sage.

Oct. 18, 1912.

Oct. 28, 1912: At 8h 50m a.m., l.m.t., I set off 38° 54' N. on the lat. arc, and 13° 07' S. on the decl. arc, and determine a meridian with the solar, at the cor. of secs. 17, 18, 19 and 20. Thence I run N. 0° 03' W. bet. secs. 17 and 18; descending gradually

Chains

- over rough mountainous land, covered with scattering cedar and pinon timber and scattering undergrowth of shadscale, Brigham brush and salt sage, over gentle N. slope.
- 6.00 Descend abruptly rocky N. slope of canon wall.
- 20.00 Dry canon, about 200 ft. below sec. cor., course S. 60° E. ascend abruptly rocky S. slope.
- 32.00 Top of abrupt ascent, about 175 ft. above canon, bears NW. and SE. Thence across flat topped ridge bearing NW. and SE.
- 38.00 Descend abruptly rocky NE. slope.
- 40.00 Set an iron post, 3 ft. long, 1 in. in diam., only 4 ins. in the ground, on account of underlying rock, surrounded by a mound of stone, 4 $\frac{1}{2}$ ft. base, 2 $\frac{1}{2}$ ft. high, for $\frac{1}{2}$ sec. cor., with brass cap, mkd.
- | | | |
|-----|------|------|
| 1/4 | S 18 | S 17 |
| | 1912 | |
- raise a mound of stone, 3 ft. base, 3 ft. high, W. of cor.
- 45.00 Dry canon, about 75 ft. deep, course SE.; ascend abruptly.
- 55.00 Rocky point, about 60 ft. high, falls SE.; descend gradually NE. slope.
- 70.00 Dry canon, about 75 ft. deep, course SE.; ascend.
- 75.00 Rocky point, falls SE.; descend gradually.
- 80.00 Set an iron post, 3 ft. long, 2 ins. in diam., only 12 ins. in the ground, on account of underlying rock, supported by a mound of stone, 3 ft. base, 2 ft. high, for cor. of secs. 7, 8, 17 and 18, with brass cap, mkd.
- | | |
|--------|--------|
| T 22 S | R 13 E |
| S 7 | S 8 |
| S 18 | S 17 |
| 1912 | |
- raise a mound of stone, 3 ft. base, 3 $\frac{1}{2}$ ft. high, W. of cor.
- Land, rough and mountainous on steep, rocky slopes into canons draining SE. Surface covered with numerous sandstone boulders, with considerable outcropping sandstone surface rock and ledges.
- Soil, shallow disintegrated sandstone of poor quality, not suited to cultivation on account of steep slopes and

poor quality of soil; some grazing throughout the mile. Timber, scrub cedar and pinon; undergrowth, shadscale, Brigham brush and salt sage.

Oct. 29, 1912; from the cor. of secs. 7, 8, 17 and 18, I run N. 89° 54' E. on random line bet. secs. 8 and 17.

40.00 Set temp. $\frac{1}{2}$ sec. cor.
30.08 Intersect N. and S. line 18 lks. N. of cor. of secs.

8, 9, 16 and 17. Here, I deflect from a solar line carried up from the S. this a.m., and run N. 89° 58' W. on true line bet. secs. 8 and 17; ascending abruptly over rolling mountainous land, covered with scattering cedar and pinon timber and scattering undergrowth of shadscale and salt sage, over E. slope of knoll.

8.00 Top of knoll, about 120 ft. above cor.; descend W. slope.
35.00 Head of small, dry gulch, course SE., about 125 ft. below knoll; ascend gradually.

40.04 Set an iron post, 3 ft. long, 1 in. in diam., on surface rock, surrounded by a mound of stone, 4 $\frac{1}{2}$ ft. base, 2 $\frac{1}{2}$ ft. high, for $\frac{1}{2}$ sec. cor., with brass cap, mkd.

$\frac{1}{2}$ S 89° 58' W
SB17

1912

raise a mound of stone, 3 ft. base, 3 ft. high, N. of cor.

43.00 Low point, falls SE. Thence along gentle N. slope.

80.08 The cor. of secs. 7, 8, 17 and 18.
Land, rolling mountainous on gentle W. and N. slopes, with exception of steep slopes near top of knoll at 8.00 chs. Surface covered with numerous sandstone boulders and outcroppings of sandstone surface rock and ledges. Soil, very shallow disintegrated sandstone of poor quality, of no value for cultivation but affording fair grazing. Timber, scrub cedar and pinon; undergrowth, shadscale and salt sage.

Chains

Oct. 28, 1912: At app. noon, I set off 13° 10' S. on the decl. arc, and observe the sun on the meridian, at the cor. of secs. 7, 8, 17 and 18. The resulting lat. is 38° 55' N. Thence I run West on random line bet. secs. 7 and 18.

40.00 Set temp. $\frac{1}{4}$ sec. cor.

82.40 Intersect. W. bdy. of Tp. 14 lks. S. of cor. of secs. 7, 12, 13 and 18, heretofore described. Thence I run S. 89° 54' E. on true line bet. secs. 7 and 18; over rolling mesa land; heavily timbered with scrub cedar and pinon and covered with scattering undergrowth of shadscale and salt sage.

1.00 Edge of mesa, bears NW. and SE. Over rolling mesa.

37.50 Edge of mesa, bears NW. and SE.; desc. abruptly NE. slope.

42.40 Set an iron post, 5 ft. long, 1 in. in diam., only 8 ins. in the ground, on account of underlying rock, surrounded by a mound of stone, 4 $\frac{1}{2}$ ft. base, 2 ft. high, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.

$\frac{1}{4}$ S 7
S 18
1912

raise a mound of stone, 3 ft. base, 2 ft. high, N. of cor.

50.30 Foot of mesa, about 100 ft. below top, bears NW. and SE. Descend gradually NE. slope.

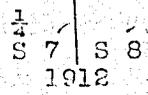
82.40 The cor. of secs. 7, 8, 17 and 18. Land, rolling mountainous on gentle slopes, with exception of steep NE. breaks of mesa. Surface covered with numerous sandstone and limestone boulders. Soil, on mesa, light, fine, dry, warm, sandy loam, of good texture, 8 to 14 ins. deep on clay subsoil, suited to cultivation if watered. The soil below the mesa is of the same character but is only from 6 to 10 ins. deep on sandstone bedrock and is not so well suited to cultivation on account of shallowness. The entire mile affords excellent grazing. Timber, scrub cedar and pinon: undergrowth, shadscale and salt sage.

Oct. 28, 1912.

Oct. 29, 1912, from the cor. of secs. 7, 8, 17 and 18, deflecting from a solar line carried up from the S.

yesterday, I run N. 0° 03' W. bet. secs. 7 and 8; descending very gradually over rolling mountainous land, heavily timbered with scrub cedar and pinon and covered with considerable undergrowth of shadscale and salt sage, over gentle N. slope.

40.00 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for 1/4 sec. cor., with brass cap, mkd.

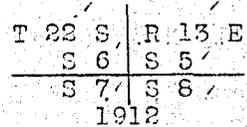


raise a mound of stone, 2 ft. base, 1 1/2 ft. high, W. of cor.

70.00 Descend very abruptly over S. wall of canon; over numerous sandstone ledges.

76.00 Dry canon, about 180 ft. deep, course SE.; ascend abruptly N. wall of canon, over sandstone ledges.

80.00 Set an iron post, 3 ft. long, 2 ins. in diam., only 8 ins. in the ground, on account of underlying rock, surrounded by a mound of stone, 4 1/2 ft. base, 2 ft. high, for cor. of secs. 5, 6, 7 and 8, with brass cap, mkd.



raise a mound of stone, 3 ft. base, 3 ft. high, W. of cor. Land, rolling mountainous on gentle N. slope, in S. 70 chs.

rough and mountainous on steep rocky slopes into canon in N. 10 chs. Surface covered with numerous sandstone boulders, with numerous sandstone ledges in N. 10 chs.

Soil, light, fine, dry warm, sandy loam of good texture, 6 to 30 ins. deep, on sandstone bedrock, well suited to cultivation, if watered, where the soil is of sufficient depth; affords good grazing except N. 10 chs.

Timber, scrub cedar and pinon; undergrowth, shadscale and salt sage.

Instrument was in transit at noon preventing lat. obsn.

Chains

Oct. 31, 1912: from the cor. of secs. 5, 6, 7 and 8, I run S. 89° 58' E. on random line bet. secs. 5 and 8.

40.00 Set temp. $\frac{1}{4}$ sec. cor.

60.20 Intersect N. and S. line at cor. of secs. 4, 5, 8 and 9. Here, I deflect from a solar line carried up from the S. this p.m., and run N. 89° 58' W. on true line bet. secs. 5 and 8; ascending gradually over rolling mountainous land, covered with scattering cedar and pinon timber and considerable undergrowth of shadscale and salt sage, over gentle E. slope.

15.00 Foot of mesa, bears N. and S.; ascend abruptly E. slope.

21.00 Top of mesa, bears N. and S., about 150 ft. above sec. cor. Thence across mesa.

26.40 Edge of mesa, bears N. and S.; desc. abruptly W. slope.

35.00 Foot of mesa, about 150 ft. below top, bears N. and S. Descend gradually gentle W. slope.

40.10 Set an iron post, 3 ft. long, 1 in. in diam., 26 ins. in the ground, for $\frac{1}{4}$ sec. cor., with brass cap, mhd.

$$\begin{array}{r} \frac{1}{2} \text{ S } 5 \\ \hline 88 \\ \hline 1912 \end{array}$$

raise a round of stone, 2 ft. base, 1 1/2 ft. high, N. of cor. Descend abruptly SW. slope, over sandstone ledges.

51.00 Small, dry canon, about 80 ft. below $\frac{1}{4}$ sec. cor., course NW.; ascend abruptly over sandstone ledges.

58.00 Rocky point, about 80 ft. high, falls N.: desc. abruptly NW. slope of canon wall, over sandstone ledges.

65.10 Dry canon, about 150 ft. deep, course NE.; ascend abruptly SE. slope of canon wall, over sandstone ledges.

80.20 The cor. of secs. 5, 6, 7 and 8.

Land, in E. 49 chs., rolling mountainous on gentle slopes, with exception of steep breaks of mesa; in W. 38 chs., rough and mountainous on steep, rocky breaks into canons. Soil, in E. $\frac{1}{2}$ mile, light, fine, dry, warm, sandy loam of good texture, rich in lime, 8 to 20 ins. deep, on clay subsoil, suited to cultivation if watered, and affords

excellent grazing. Soil, in W. $\frac{1}{2}$ mile, very sandy and of poor quality, quite shallow on sandstone bedrock, and is not suited to cultivation but affords some grazing. Timber, scrub cedar and pinon: undergrowth, shadscale and salt sage.

Oct. 31, 1912.

Oct. 29, 1912, at the cor. of secs. 5, 6, 7 and 8, I deflect from a solar line carried up from the S., and run N. $89^{\circ} 54'$ W. on random line bet. secs. 6 and 7.

40.00 Set temp. $\frac{1}{4}$ sec. cor.

82.55 Intersect W. bdy. of Tp. 7 lks. N. of cor. of secs. 1, 6, 7 and 12, heretofore described. Thence I run S. $89^{\circ} 57'$ E. on true line bet. secs. 6 and 7; over rolling mesa, covered with heavy cedar and pinon timber and scattering undergrowth of shadscale and salt sage.

0.60 Edge of mesa, bears N. and S.: desc. abruptly E. slope.

12.50 Foot of mesa, about 150 ft. below top, bears N. and S. Descend gradually over gentle E. slope.

34.50 Small, dry gulch, course NE.

39.70 Descend abruptly SE. slope, over sandstone ledges.

42.55 Set an iron post, 3 ft. long, 1 in. in diam., on surface rock, surrounded by a mound of stone, $4\frac{1}{2}$ ft. base, $2\frac{1}{2}$ ft. high, for $\frac{1}{4}$ sec. cor., with brass cap, mkd.

$\frac{1}{4}$ S 6
S 7
1912

raise a mound of stone, 3 ft. base, 3 ft. high, N. of cor.

45.40 Dry canon, about 100 ft. deep, course NE.; ascend abruptly over sandstone ledges.

50.50 Top of canon wall, about 100 ft. above canon, bears NE. and SW. Thence over rocky flat.

60.40 Descend abruptly NE. slope, over sandstone ledges.

78.50 Dry canon, about 175 ft. below top of canon wall, course SE.; ascend abruptly SW. slope, over sandstone ledges.

82.55 The cor. of secs. 5, 6, 7 and 8.

Chains

Land, rolling mountainous in W. $\frac{1}{2}$ mile, and rough and mountainous on steep, rock breaks of canons in E. $\frac{1}{2}$ mile. Surface covered with numerous sandstone and limestone boulders in W. $\frac{1}{2}$ mile, with considerable outcropping sandstone in E. $\frac{1}{2}$ mile. Soil, in W. $\frac{1}{2}$ mile, light, fine, dry, warm, sandy loam of good texture, 8 to 16 ins. deep, on clay subsoil, in W. $\frac{1}{2}$ mile, suited to cultivation if watered, and affording excellent grazing. Soil in E. $\frac{1}{2}$ mile is very sandy, of poor quality and very shallow on sandstone bedrock. Not suited to cultivation and affording little grazing. Timber, scrub cedar and pinon; undergrowth, shadscale and salt sage.

N. $0^{\circ} 03'$ W. on random line bet. secs. 5 and 6.

40.00

Set temp. $\frac{1}{4}$ sec. cor.

60.38

Intersect N. bdy. of Tp. 22 lks. W. of point for cor. of secs. 5, 6, 31 and 32, as determined by random line. Thence I run S. $0^{\circ} 09'$ W. on true line bet. secs. 5 and 6; descending gradually over rolling mountainous land, covered with scattering cedar and pinon timber and considerable undergrowth of shadscale and salt sage, over gentle E. and SE. slope.

23.00

Dry gulch, course NE.; ascend abruptly steep NE. slope.

39.40

Top of narrow ridge, about 150 ft. high, bears E. and W. Point for $\frac{1}{4}$ sec. cor. will fall on steep S. slope, in loose earth and stone, where it would be liable to destruction from slide. I therefore perpetuate this corner as follows; at

39.48

Set an iron post, 3 ft. long, 1 in. in diam.; only 6 ins. in the ground, on account of underlying rock, surrounded by a mound of stone, $4\frac{1}{2}$ ft. base, 3 ft. high, for witness cor. to $\frac{1}{4}$ sec. cor., with brass cap, mkd.

WC
S 5
1912

12120
rains a mound of stone, 5 ft. base, 3 ft. high, W. of cor.
Descend abruptly steep S. slope.
42.35 True point for $\frac{1}{2}$ sec. cor., not set.
47.50 Foot of ridge, about 150 ft. below top, bears E. and W.
Descend gradually S. and SE slope.
57.50 Small, dry gulch, course SE.
77:00 Descend abruptly rocky SW. slope, over sandstone ledges.
86.32 The cor. of secs. 5, 6, 7 and 8.
Land, rolling mountainous.
Surface covered with numerous sandstone boulders, with
considerable sandstone surface rock and ledges.
Soil, very sandy and stony, 4 to 10 ins. deep on sandstone
bedrock, not suited to cultivation but affords some grazing.
Timber, scrub cedar and pinon; undergrowth, shadscale and
salt sage.
Instrument in transit at noon prevents lat. obsn.
Oct. 23, 1912.

GENERAL DESCRIPTION.

The lands surveyed in this Tp. are both mountainous and rolling.

The lands in the eastern portion of the Tp., lying E. of San Rafael Reef, while generally mountainous, contain considerable rolling land that could be cultivated if watered. The soil in this portion of the Tp. is not of the best quality, being strongly impregnated with alkali and gypsum. It supports a rather scanty growth of low shadscale and salt sage undergrowth which affords fair grazing, and also considerable rich native grasses.

The lands in the western portion of the Tp. lie practically on top of San Rafael Swell, and contains much rolling land with a rich, sandy loam soil, capable of producing abundant crops, if watered. Much of this land could probably be dry farmed with profit. The land is broken by numerous rock canons with a general E. drainage, and by many high, gently rolling mesas. These mesas are

capped with a limestone ledge from 4 to 15 ft. high, and contain the best soil in the Tp., but could only be dry farmed, as it would be impossible to get water on them.

This portion of the Tp. supports an abundant growth of rich, nutritious, native grasses, affording excellent grazing.

The unsurveyed portion of the Tp. consists of precipitous canons and ridges of solid sandstone, impossible to survey and absolutely worthless.

San Rafael Reef, which is a bare sandstone ledge, tilted up at an angle of from 20° to 40°, with a height of from 500 to 1200 ft., is included in this unsurveyed portion.

There are no springs or streams in the Tp.; the only water being storm waters caught in pot holes or tanks eroded out of the solid rock bottoms of the canons.

There are no settlers in this Tp.

There are no settlers in the Tp. to the W., but it contains a great abundance of valuable grazing land, and also considerable land which might be profitably dry farmed.

Geological formation: Jura-Trias and Upper Carboniferous.

Robert J. Clark
U. S. Transitman.

Blank

Page

I, _____, U. S. Surveyor, do solemnly swear that, in pursuance of special instructions received from the U. S. Surveyor General for _____ bearing date of the _____ day of _____, 191 _____, I have well, faithfully, and truly, in my own proper person, and in strict conformity with said instructions, the Manual of Surveying Instructions, and the laws of the United States, surveyed all those parts or portions of _____

X For final oath of U.S. Transitman see book "F" T. 20 S., R. 15 E.

_____ of the _____ Meridian, in the State of _____, which are represented in the foregoing field notes as having been executed by me, and under my direction; and I do further solemnly swear that all the corners of said survey have been established and perpetuated in strict accordance with the Manual of Surveying Instructions, and the special written instructions of the U. S. Surveyor General for _____ and in the specific manner described in the field notes, and that the foregoing are the original field notes of such survey.

U. S. Surveyor.

Subscribed by said _____, and sworn to before me }
this _____ day of _____, 191 _____



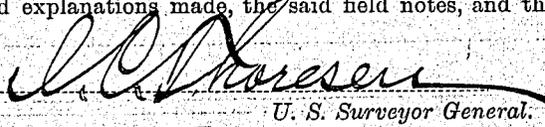
APPROVAL.

OFFICE OF THE UNITED STATES SURVEYOR GENERAL,

Salt Lake City, Utah, March 8, 1915.

The foregoing field notes of the survey of the Subdivisional lines of Township No. 22 South, Range No. 13 East of the Salt Lake Base and Meridian, Utah,

executed by _____ Robert E. Clark _____ under his special instructions dated _____ June 10 _____, 191², having been critically examined, and the necessary corrections and explanations made, the said field notes, and the surveys they describe, are hereby approved.


U. S. Surveyor General.

I certify that the foregoing transcript of the field notes of the above-described surveys in _____, has been correctly copied from the original notes on file in this office.